



2013 NAVAL SERVICES GAME REPORT

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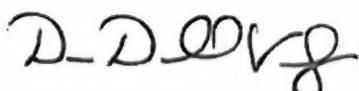
April 30, 2014

From 27-31 January 2014, the War Gaming Department of the United States Naval War College (NWC) in collaboration with the Wargaming Division of the Marine Corps Warfighting Laboratory (MCWL), hosted the 2013 Naval Services Game (NSG). Although originally slated for execution from 7-11 October 2013, the game was postponed due to the federal government shutdown at the start of fiscal year 2014.

The Naval Board directed the WGD and MCWL jointly to develop and execute an annual war game which explored U.S. Navy and U.S. Marine Corps integration, in an effort to develop forward deployed Naval forces with more integrated capabilities. NSG-13 focused on the exploration of alternative force deployment constructs (FDCs) for engagement and crisis response to better meet the needs of fleet and geographic Combatant Commanders.

The ensuing analytic report was prepared by a core team of research faculty and professional analysts from both of these institutions. The findings of this report reflect the observations, insights, and recommendations that were garnered from participants during game play. Moreover, this report reflects the use of a wide range of research methods and tools designed to elicit intellectually honest analysis of complex problems.

For additional information concerning this project, please write to the Chairman, War Gaming Department, Naval War College, 686 Cushing Road, Newport, Rhode Island 02841, or contact him via electronic mail at wargaming@usnwc.edu.



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EXECUTIVE SUMMARY

Overview and Objectives

Conducted from 27-31 January 2014 in Newport, Rhode Island, and under the design, direction and analysis of the United States Naval War College (NWC) and the Marine Corps Warfighting Laboratory (MCWL), the Naval Services Game (NSG) brought together 30 members of the Navy and Marine Corps to explore U.S. Navy and U.S. Marine Corps integration. The intent of this exploration is to help develop forward deployed naval forces with integrated capabilities for engagement and crisis response.

The following objectives were approved by the Naval Board for this war game:

1. *Identify alternative naval force deployment constructs to meet Combatant Commander steady state and crisis response requirements.*
2. *Explore the implications and challenges concerning the implementation, employment and maintenance of alternative naval force deployment constructs.*

Game Structure

NSG 13 was designed as a secret level, one-sided planning (i.e., opposing force elements embedded into the scenario contrasted with free play), professionally-facilitated, seminar-style event. It was comprised of three, independent BLUE cells tasked similarly to respond to the Combatant Commander's steady state and crisis response requirements. Players adopted perspectives of theater service components and Service Chiefs throughout game play.

NSG 13 was set in 2017. The game played BLUE capabilities against real world COCOM events for steady state and crisis response. Game designers derived the scenario's scale and scope from real-world classified plans and data that represented the average availability of ships and units to participate in medium to large scale exercises and engagements over a five month period. The details of the exercise and engagement activities were changed to drive different and more integrated approaches from the players. Participants reacted to three notional crisis injects spanning Noncombatant Evacuation Operation (NEO), Strike, and Major Combat Operations (MCO).

Each cell was provided with a starting set of alternative force deployment constructs (FDCs) which could be modified or completely changed to address the demands of real-world Combatant Command (COCOM) steady state requirements, ranging from medium to large-scale exercises and engagements. Players were then presented with three crises in order to depart from routine, steady-state operations to determine how the alternative FDC would execute initial response. Accordingly, cells needed only to assign appropriate FDCs to handle the requisite naval response, not play out the tactical scenario.

Cell A began with a set of FDCs that most resembles the current operational structure utilized in theater, and modified their FDCs to address the lack of connectors and units necessary to conduct steady state and crisis response missions. Whereas. Cell B developed FDCs that were deconstructed into small packages designed to address phase 0 operations. During game play, Cell B players explored the concept of distributing small Marine detachments aboard non-traditional platforms. Cell C's approach centered on building capabilities as a balanced force that can operate as separate entities yet aggregate as required. In order to build these FDCs, they dissolved the ARG/MEU.

During game play, each BLUE cell was required to produce changed or refined FDCs, complete individual surveys, engage in cell-based facilitated seminar discussions captured by members of the control team, and provide content to threaded discussions captured electronically. Each of these data streams was designed to explore the implications and challenges concerning the implementation, employment and maintenance of alternative Naval force deployment constructs.

Summary of Participants

Players in NSG 13 represented commissioned officer pay grades O-3 through O-6. They averaged 20 years of service per participant. All participants were matched comparably in terms of education, with 57 percent of players holding a master's degree or higher.

With respect to warfare specialties, 33 percent of participants served in the surface/subsurface warfare community, 24 percent were USN and USMC aviators, 20 percent were USMC ground combat experts, 17 percent belonged to the USMC logistics specialty and six percent served in the Navy Expeditionary Combat Command (NECC). Within the surface warfare realm, amphibious and Carrier Strike Group (CSG) subject matter experts were represented.

A final session including RADM Sinclair Harris (USN), RADM Walter "Ted" Carter (USN), BGen Kevin Killea (USMC), and RDML Rich Snyder (USN) was also conducted, during which the perspectives and insights of these senior naval services leaders were captured for inclusion in post-game analysis.

Summary of Analysis and Results

While players did develop final alternative FDCs, the specific solutions determined by one cell or another should not be seen as the key aspect of the game. Key innovative aspects of developed alternative FDCs are discussed in the final report. As stated in the objectives, players were tasked with identifying alternative FDCs in order to discover key innovative aspects and to identify possible implications and challenges of their use. The illustrated solutions provided by each cell should not be viewed as ready for experimentation; however,, they, in conjunction with the common themes explored during game play, do provide some interesting options that may warrant further research as may be recommended by the Naval Warfare Group. Detailed information regarding each cell's' outputs can be found, respectively, on pages 23, 30, and 36.

Based upon the Naval Board's direction and after performing a review of related literature, the NWC's War Gaming Department (WGD) and the MCWL Wargaming Division (WGD) jointly developed the following overarching research questions.

1. *What are the principles and force design criteria (FDCr) influencing decision making in the construction and revision of force deployment constructs (FDCs) in order to accomplish a mission in a steady state and during crisis response?*

Without flexibility of core capabilities, it is impossible to design a single FDC to accomplish all possible missions across the range of military operations. These core competencies must be identified and trained to enable an appropriate speed of response. While a variety of FDCs with flexibility of capabilities is a necessity, players also understood that forces may need to be disaggregated to accomplish steady state missions. The need for training to a concept of force aggregation/disaggregation is essential to integrate the varying capabilities. *Using a game-provided alternative FDC, what are the issues and challenges that influence interoperability to the forward-deployed naval force?*

Effective Command and Control (C2) is essential to provide the greatest fluidity of operations in a joint environment. Moreover, joint pre-deployment training cycles which are standardized would create continuity of training and operations in regards to efficiency and timing. Lastly, a common fluency of terms, and equipment usage is required to reduce cultural barriers that would impede joint operations.

2. *Given the alternative FDC and its corresponding naval force integration, can these capabilities be sufficiently integrated to accomplish mission in steady state and during crisis response? Why or why not?*

Yes. Alternative FDCs geared towards steady state, were capable of accomplishing the variety of missions required, both throughout the spectrum of steady state operations and during non-MCO crisis response.

However, significant changes in service level doctrine, training, and pre-deployment exercises would be necessary to effectively utilize the capabilities of the alternative FDCs when applied to major combat operations.

3. *In regards to naval force integration, what operational challenges are present in force re-aggregation, and how can they be overcome?*

The primary challenge inherent in the alternative FDCs was that significant aggregation would be required in order to respond in MCO. Moreover, C2 is one of the primary challenges in re-aggregating dispersed naval forces. A clear delineation of command relationships would mitigate the inherent C2 issues involved in aggregating previously

dispersed Navy and Marine forces. Lastly, integrated staffs should become the norm, with Marine officers routinely assigned to Navy staffs.

Current doctrine and training procedures do not sufficiently address the challenges of force aggregation in response to MCO. Aggregation should become a core competency, and that the training cycle for each FDC should be modified to include exercises involving force aggregation built up to a level required for major combat operations.

4. *How do the naval services efficiently implement, employ, and maintain the alternative FDC in order to accomplish the mission?*

Implementation: Dispersed laydown of FDCs throughout the theater afforded the widest range of mission capabilities. This construct spread out capabilities throughout the AOR for initial crisis response. However, while this setup provided the COCOM with these capabilities in Phases 0 and 1, it did not present a more efficient or capable laydown when the intensity of conflict levels increased.

Employment: Each cell determined a great need for a wide range of FDC capabilities. The diversity of the FDCs provided the best capabilities over a wider area.

Maintenance: The dispersal of forces across the theater came at a cost to performance. FDCs were not able to maintain high levels of performance during MCO or for an extended period of time as capabilities of theater assets were dispersed in steady-state, and dispersal of forces presents substantial logistics challenges.

Summary of Themes

Analysis of data garnered from the eight information sources and explored in-depth in response to the research questions, also suggests three distinct themes emerged from game play. These three themes are as follows:

- Flexibility of Capabilities
- Aggregation of Forces
- Training toward Integration

Flexibility of Capabilities: Each of the three BLUE cells identified flexibility as the key value that must be considered in selecting the appropriate FDC or blending multiple FDCs. Indeed, integrating flexible capabilities within an alternative FDC was deemed essential in responding to the full spectrum of required missions, in both steady state and crisis response. It was determined that flexibility is a core competency of the naval force, and elements must train to these critical capabilities to enable an appropriate speed of response.

Aggregation of Forces: All three player cells emphasized that the aggregation of multiple FDCs would be necessary in the event of a major crisis. Players identified C2 as one of the primary

challenges in aggregating the dispersed naval force, and if needed, disaggregating the force back to a dispersed naval force.

Training towards Integration: The players addressed integration in two ways. The first was the further integration of Navy and Marine Corps personnel and platforms to provide a more flexible and capable force. Additionally, integration was addressed in the bringing together of capabilities that have not traditionally been combined. Players identified that training in the concept of force aggregation/disaggregation is essential to effectively integrate these capabilities to accomplish missions.

This report includes a more detailed analysis with graphic descriptions of the three areas of focus identified, as well as a discussion of the example FDCs identified by each cell. Examining the utilization of the naval force through these three lenses allow for greater clarity on what is effective and what is less valuable.

I. INTRODUCTION

A. Statement of Sponsor's Interest in this Topic

According to the Cooperative Strategy for 21st Century Seapower, “the speed, flexibility, agility and scalability of maritime forces provide joint or combined force commanders a range of options for responding to crises” (2007, p. 8). However, such benefits can only be garnered if the maritime services, especially the warfighting-focused Navy and Marine Corps have a holistic appreciation beyond their own strengths to include the capabilities and equities of their sister services.

Toward this end, in the spring of 2011, the Naval Services Board tasked the United States Naval War College’s War Gaming Department (NWC WGD) and the Marine Corps Warfighting Laboratory (MCWL) with cooperatively developing a series of games that would explore development and integration within the naval force. The project was subsequently termed the Naval Services Game (NSG) series.

Whereas NSG 12 explored principles of aggregation at the operational level, NSG 13 focused on naval force deployment constructs and the challenges associated with implementing, deploying, and maintaining these constructs.

The purpose of this report is to discuss NSG 13 findings through a summary of game play and analysis of player-derived themes. In addition, this report will first provide background information on descriptive elements including the game’s objectives and research questions, design, and participants.

It is important to note that it was beyond the scope of the 2013 Naval Service Game to identify one specific “best” alternative FDC. Additionally, there was no attempt to compare or evaluate FDCs between each other or in relationship to traditional force constructs. While the actual FDCs used to generate the data and characteristics described above were not intended to be rushed into experimentation for future deployment, players identified some interesting and innovative ideas that are both consistent with the game objectives and warrant further examination.

B. Game Objectives

There were two objectives for NSG 13 approved by the Naval Board. These are as follows:

Identify alternative naval force deployment constructs to meet Combatant Commander steady state and crisis response requirements.

Explore the implications and challenges concerning the implementation, employment and maintenance of alternative naval force deployment constructs.

C. Overarching Research Questions

Based on the Naval Board's interest in exploring U.S. Navy and U.S. Marine Corps integration to develop forward deployed Naval Forces with integrated capabilities for engagement and crisis response, and after performing a review of related literature, the NWC's WGD and MCWL jointly developed the following five research questions to help address both objectives:

Research Question #1: What are the principles and force design criteria (FDCr) influencing decision making in the construction and revision of force deployment constructs (FDCs) in order to accomplish a mission in a steady state and during crisis response?

Research Question #2: Using a game-provided alternative FDC, what are the issues and challenges that influence interoperability to the forward-deployed naval force?

Research Question #3: Given the alternative FDC and its corresponding naval force integration, can these capabilities be sufficiently integrated to accomplish mission in steady state and during crisis response? Why or why not?

Research Question #4: In regards to naval force integration, what operational challenges are present in force re-aggregation, and how can they be overcome?

Research Question #5: How do the naval services efficiently implement, employ, and maintain the alternative FDC in order to accomplish the mission?

D. Definition of Key Terms

In order to ensure that all participants in the game were grounded in a common lexicon, the following terms and concepts were provided to them for reference throughout data collection periods of NSG 13 (e.g., individual player surveys, cell-based plenaries).

The following key terms and definitions were internally developed during the design phase of NSG 13, and used by players as common language in their plenary discussions and survey responses.

Force Deployment Constructs (FDCs): Standardized packages of military units organized and trained to deploy together to accomplish combatant command missions.

Theater Set of Force Deployment Constructs: The collection of all FDCs in a given Geographic Combatant Commander's theater.

Force Design Criteria (FDCr): From the Title 10 perspective, the principles that are important in designing a force deployment construct to meet Combatant Commander missions. The Tiger Team developed six criteria. The players utilized these criteria as a starting point for further development of force deployment constructions. These six criteria are as follows:

- Integration
- Interoperability
- Adaptable/Flexible
- Standardized
- Scalable/ Capable
- Aggregated/ Composited

Mission Sets: These refer to the Geographic Combatant Commander's steady state and crisis response missions. For reference and background, here are the core capabilities for naval forces as listed in the Cooperative Strategy for the 21st Century:

- Forward Presence
- Deterrence
- Sea Control
- Power Projection
- Maritime Security
- Humanitarian Assistance/Disaster Relief (HA/DR)

FDC Capabilities: The missions that a particular FDC is able to accomplish.

FDC Command Element: The FDC's commander, staff, and associated support.

II. GAME DESIGN

A. Discussion of Game Design

NSG 13 was designed as a secret level, one-sided planning (i.e., opposing force elements embedded into the scenario contrasted with free play), professionally-facilitated, seminar-style event. It was comprised of three, independent BLUE cells tasked similarly to respond to the Combatant Commander's steady state and crisis response requirements. Players adopted perspectives of theater service components and Service Chiefs throughout game play.

NSG 13 was set in 2017. The game played BLUE capabilities against real world COCOM events for steady state and crisis response. Game designers derived the scenario's scale and scope from real world classified plans and data that represented the average availability of ships and units that participated in medium to large scale exercises and engagements over a five month period. The details of the exercise and engagement activities were changed to drive different and more integrated approaches from the players. Participants reacted to three notional crisis injects spanning Noncombatant Evacuation Operation (NEO), Strike, and Major Combat Operations (MCO).

During the game design phase it was decided that building alternative FCDs from scratch during game execution would require too much time for the players to accomplish. As a result, a Tiger Team was assembled in June 2013 to develop a set of alternative naval force constructs to feed game execution from which the players could later deviate. This group, comprised of eight active duty and retired O-6s from the U.S. Navy and U.S. Marine Corps, was given a list of available units, capabilities and platforms to choose from. As part of this process, they developed force design criteria which informed players at the start of the game. Figure 2.1 is an example of a theater set of FDCs developed for the game.

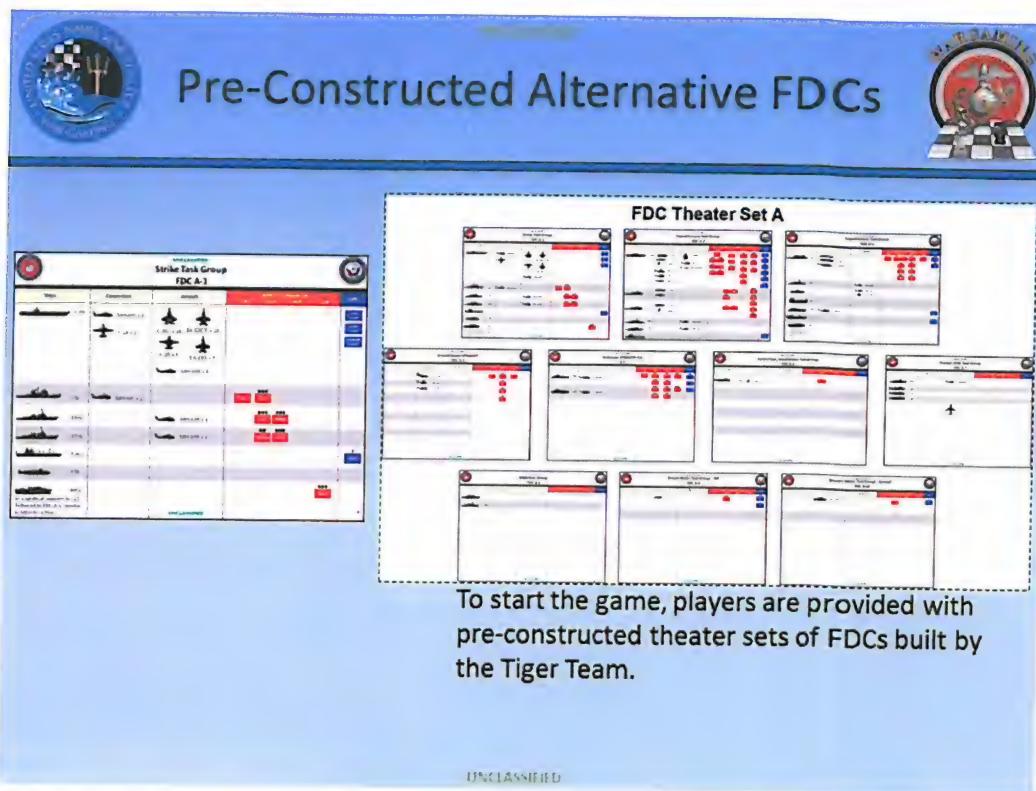


Figure 2.1- Example of a theater set of FDCs

B. Game Mechanics and Participant Assignments

The 2013 Naval Services Game was held over five days, from 27-31 January 2014 at the United States Naval War College in Newport, Rhode Island. Figure 2.2 and table 2.1 depict the overall organization and flow of the game, while Appendix "D" provides the detailed schedule of events.

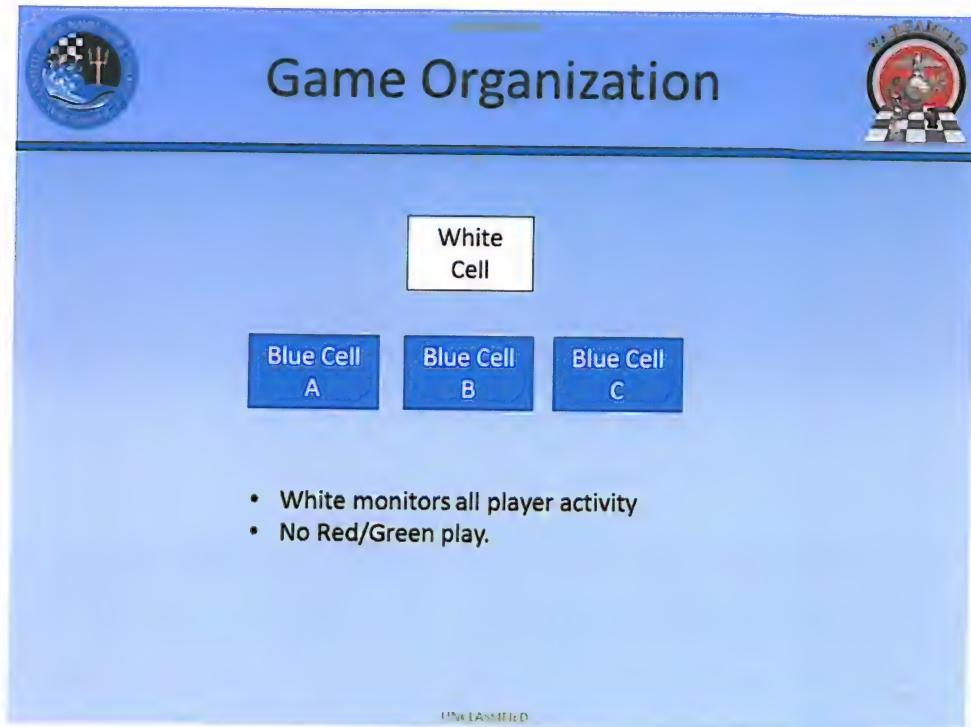


Figure 2.2 – 2013 Naval Services Game Organization

| Monday | Tuesday | Wednesday | Thursday | Friday |
|---|---|--|---|--|
| Welcome & Inbriefs MLH AUD (0800-1100) | | Crisis Injects Game Cells (0800-1145) | Finalize Alt. FDCs Game Cells (0800-0945) | Outbrief Prep Game Cells (0730-0830) |
| Cell Fam. & Refine Alt. FDCs Game Cells (1100-1200) | Force Allocation Game Cells (0800-1200) | Indiv. Surveys Game Cells (1145-1200) | Indiv. Surveys Game Cells (0945-1000) | Final Outbriefs JCC (0900-1030) |
| Lunch (1200-1300) | Lunch (1200-1300) | Lunch (1200-1300) | Lunch (1200-1300) | ENDEX (1200) |
| Refine Alt. FDCs Game Cells (1300-1630) | Force Allocation Game Cells (1300-1630) | Employ, Implement, & Maintain Game Cells (1300-1645) | Plenary Discussion JCC (1300-1615) | |
| Indiv. Surveys Game Cells (1630-1700) | Indiv. Surveys Game Cells (1630-1645) | | Outbrief Prep Game Cells (1615-1700) | |

Table 2.1 – 2013 Naval Services Game Schedule

On the morning of the first day (27 January 2014), players convened in the McCarty Little Hall (MLH) Auditorium where they received a series of briefings that created a common understanding of initial conditions at the start of the game. Briefing topics included a game overview along with a presentation on game tool familiarization. Following these presentations, the 30 participants were divided into three player cells, referred to as BLUE Cell A, BLUE Cell B, and BLUE Cell C respectively.

In their cells, each player answered a baseline demographic survey before discussing and determining the key force design criteria for forming alternative FDCs. During this activity, players assumed the perspective of the Naval Services. They developed their own criteria, compared it to the FDCr created by the Tiger Team and reconciled the minor differences (if any) to create a new list. While the three cells were given an identical scenario, each cell started with a different set of pre-constructed FDCs built by the Tiger Team.

After an initial review of their assigned set of FDCs, players were allowed to refine them if needed to make them more employable. This step provided the foundation for subsequent gameplay and player decisions. Players had multiple opportunities to further revise their FDCs throughout gameplay. Players completed individual surveys at the end of each activity.

During day two (28 January 2014), players took on the perspectives of the Service Components in order to allocate forces to a five-month schedule according to COCOM events in the 2017 timeframe. In this activity, players discussed the challenges they faced completing the Training and Exercise Employment Plan (TEEP) and revised their FDCs, to include creating new ones as needed, in order to meet the steady state COCOM requirements. Appendix A includes a screen shot of the Force Allocation Tool used by the players.

Day three (29 January 2014) was split into two sessions. In the morning session, players considered, from a force allocation perspective, how their alternative FDCs would respond to three crises injects in a vignette style discussion. These crisis injects were introduced in order for weeks 4, 11 and 16 of the 5-month period being considered. Players discussed the impact of reassigning forces and how well their FDCs responded to each inject. After this activity, players further revised their FDCs to reflect their crisis response. During the afternoon session, players participated in a facilitated discussion examining the implications and challenges for employing, implementing and maintaining their alternative FDCs.

On day four (30 January 2014), players had the final opportunity to revise, polish and finalize their FDCs for the wargame. Cell leads and players built outbriefs (refer to Appendix B) summarizing their cell's FDCs and insights for the plenary session held that afternoon. This event served as the first opportunity for all BLUE cells to formally exchange ideas in a facilitated forum and discuss their perspectives and insights.

On the final morning of NSG 13 (31 January 2014), all BLUE cells participated in the last combined plenary activity attended by RADM Sinclair Harris (USN), RADM Ted Carter (USN),

BGen Kevin Killea (USMC), and RDML Rich Snyder (USN). The perspectives and insights of these senior naval services leaders were captured for inclusion in post-game analysis.

The full schedule of events for the Naval Services Game is found in Appendix “D” of this game report.

C. Participant Demographics

A detailed demographic summary of NSG 13 players including participants’ names, ranks, and organizations/commands may be found in Appendix “E” of this report.

Players in NSG 13 represented officer pay grades O-3 through O-6. They averaged 20 years of service per participant. All participants were comparably matched in terms of their education, with 57 percent of players holding a master’s degree or higher.

With respect to warfare specialties, 33 percent of participants served in the surface/subsurface warfare community, 24 percent were USN and USMC aviators, 20 percent were USMC ground combat experts, 17 percent belonged to the USMC logistics specialty and six percent served in the Navy Expeditionary Combat Command (NECC). Within the surface warfare realm, amphibious and Carrier Strike Group (CSG) subject matter experts were represented.

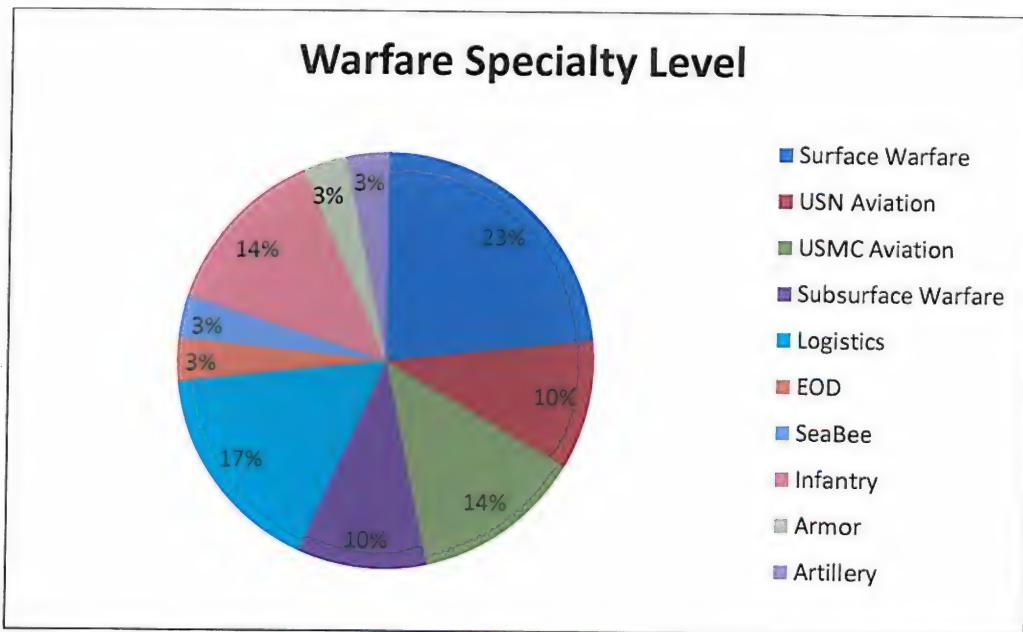


Figure 2.3 – Warfare Specialty Areas of 2013 Naval Services Game Participants

As shown in figures 2.3 and 2.4, respectively, participants in the NSG 13 possessed a wealth of warfare specialty experience (mean=17 years). All BLUE cells each contained a nearly equal number of Navy and Marine Corps representatives and generally comparable warfare skillsets.

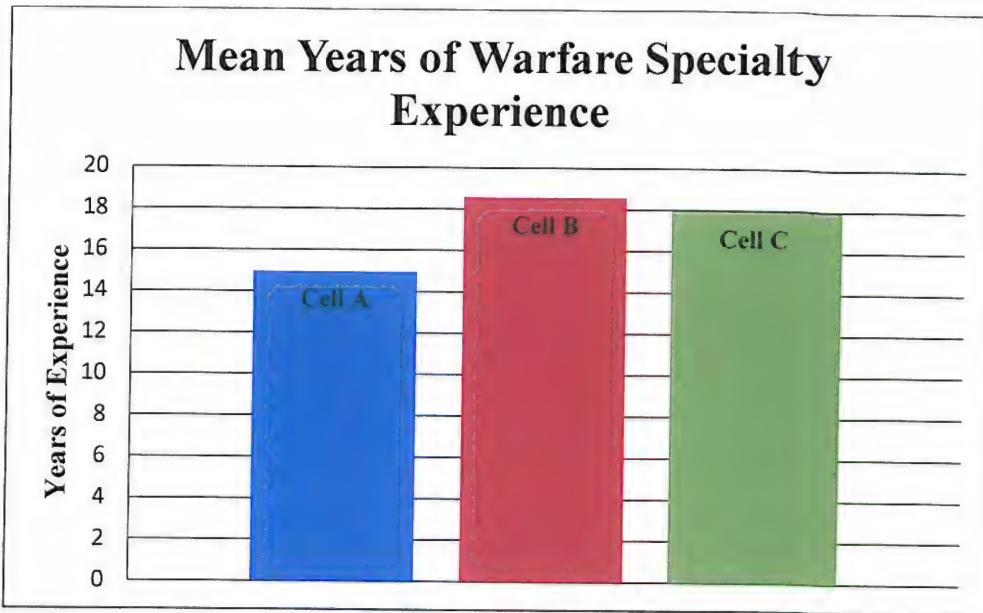


Figure 2.4 – Mean Years of Warfare Specialty Experience per Player Cell

III. RESEARCH METHODOLOGY

A. Overarching Methodology and Analytic Framing

While the bulk of discussion regarding the methodological basis for the NSG 13 game can be found in Appendix “F,” this section provides a brief summary of the overarching analytical techniques employed to capture data and conduct post game analysis.

NSG 13 focused on generating new knowledge to develop a better understanding of alternative force constructs. The preponderance of data encountered in the NSG 13 were qualitative, because they focused on the players’ opinions, beliefs, and values. Quantitative data were also included in this project, especially demographic data pertaining to players’ ages, years of experience, and level of educational attainment (see figures 2.3 and 2.4).

The collection of seemingly disparate datasets (i.e., both qualitative and quantitative information) suggested that a triangulative approach to analysis was warranted. Triangulation has incredible power as an analytic technique, because it allows the researcher to distinguish between exceptions and commonalities in data. Moreover, the use of a triangulation approach allowed the Data Collection and Analysis Team (DCAT) to evaluate data with the appropriate methodology, rather than the methodology driving the evaluation. A description of each of the three analytic practices (content analysis, grounded theory, and ethnography) used to generate triangulative knowledge are described in the Appendix “F” of this report.

B. Collection Approach

In order to answer the five research questions considered in the 2013 Naval Services Game, eight primary datasets were collected. These eight datasets, their inherent value to this project as data streams and the approach used to analyze them are included in Appendix “F”.

IV. ANALYSIS & RESULTS

A. Analytic Overview

The NSG 13 players successfully broke free from current conventions while leveraging their experiences to develop and employ realistic alternatives. Players were given a theater set of FDCs and modified them as necessary based on the force design criteria they established. From their theater set of FDCs, cells allocated forces to meet steady state and crisis response mission sets and then discussed the challenges in employing, implementing, and maintaining their FDCs.

From the cell discussions and the products identified as cell deliverables, the DCAT was able to conduct analysis on key co-occurring terms identified through ATLAS.ti and review their relationship in correlation to the FDCs themselves. The DCAT used highlighted FDCs from final cell outbriefs and these co-occurring terms to determine three distinct areas, seen as important considerations of FDCs and their capabilities.

Further discussion in the analysis section includes considerations directly applicable to the research questions that provide insight to some of the vital areas of these FDCs. These vital areas provide additional information when considering the utility of alternative FDCs.

B. Analytic Review of Player-Identified Data

Appendix “F” of the NSG 13 report discusses the use of a comprehensive literature review prior to game development. Moreover, the specific terms and phrases identified as germane to the sponsor’s objectives, and deemed relevant to applying naval force design criteria and force design constructs to response operations are also explored.

Appendix “F” also highlights the use of the grounded theory process and the ATLAS.ti software application, and provides summary tables.

The co-occurring values described illustrate some of the relationships that were highlighted during discussions and production of cell deliverables. These adjectives coupled with the alternative FDCs, provide thoughts on how cells built and employed the FDCs to address steady state and crisis response missions.

C. Review of Key Cell Deliverables

Force Design Criteria

In order to better understand the key qualities and aspects of any Force Deployment Construct, each cell conducted a review of key criteria, or Force Design Criteria (FDCr), of a deploying force’s design and inherent organization. During this activity, players assumed the perspective of the Service level in their discussion of critical mission sets and the key criteria that are needed to develop and organize any force. After players formed their own FDCr, they reviewed the six

Tiger Team developed FDCr, compared them against their own and reconciled the differences as necessary. It is important to note that Tiger Team FDCr were not defined terms, so cells were left to interpret the definition of each FDCr as it pertained to their cell. Cells decided whether to keep what was provided or make changes as they saw fit. All three cells made changes to the list provided, mainly adding criteria that they deemed important. The narrative below describes each cell's FDCr.

| Force Design Criteria | |
|-----------------------|--------------------------|
| <u>Tiger Team</u> | <u>Delta from Cell A</u> |
| Integration | Disaggregated |
| Interoperability | |
| Adaptable/Flexible | |
| Standardized | |
| Scalable/Capable | |
| Aggregated/Composite | |

Figure 4.1- Cell A Force Design Criteria

Cell A concurred with the Tiger Team's list and added "disaggregated" to their list of important FDCr. They included this as an FDCr because they felt that regardless of how well a force is structured, there will always be a requirement to break apart and conduct disaggregated operations. Marine Corps units will always be supported by naval assets, and the more comfortable the commanding officer is with this notion, the more operations they will be able to perform. Players recognized while there were challenges in providing the right capabilities from disaggregated forces, it also provided time to rapidly respond to problems.

The slide has a blue header bar with the title "Force Design Criteria". On the left is a circular icon with a globe and a stylized emblem. On the right is another circular icon with a globe and a checkered pattern. Below the title is the question "Key force design criteria for forming alternative FDCs?". The slide is divided into two columns: "Tiger Team" and "Bravo Cell".

| <u>Tiger Team</u> | <u>Bravo Cell</u> |
|---|---|
| <ul style="list-style-type: none"> • Integration • Interoperability • Adaptable/Flexible • Standardized • Scalable/Capable • Aggregated/Composite | <ul style="list-style-type: none"> • Integration* • Interoperability* • Adaptable/Flexible • Standardized • Scalable/Capable • Aggregated/Composite • Sustainable • Affordability |

Red text denotes changes from Tiger Team.

*Integration and interoperability across Joint and Coalition

Figure 4.2- Cell B Force Design Criteria

Cell B also concurred with the Tiger Team FDCRs. However, they believed that integration and interoperability should be seen and understood to include joint and coalition aspects, not just involving Navy and Marine Corps issues. Cell B also included “sustainable” and “affordability” to their FDCr set. Players believed that as you design a force, key consideration should be given to how you sustain that force. With this in mind, players believed that with a theater set of FDCs, forces will be dispersed to a greater extent and improved ways to sustain the force will need to be realized. Players considered affordability in terms of how the FDCs can be built, how they can operate and how to train the forces.

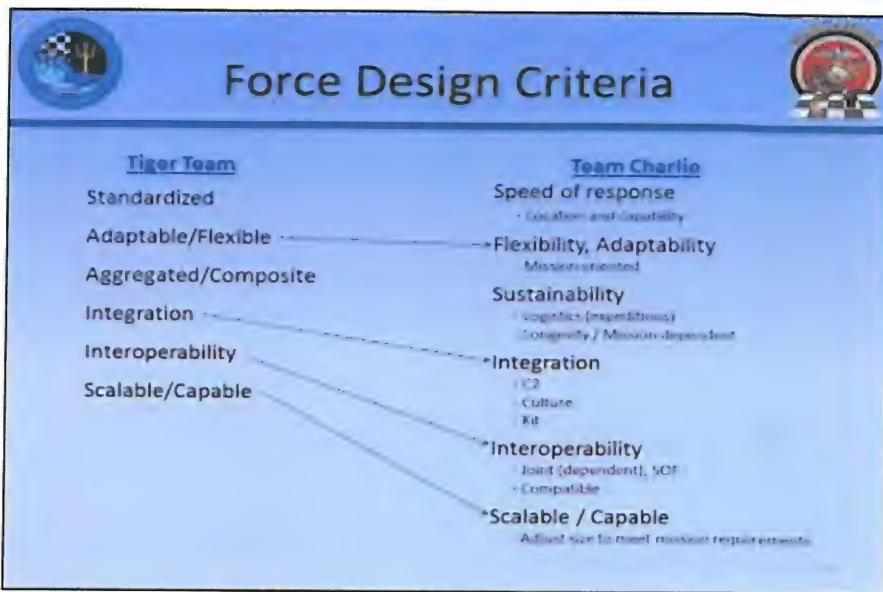


Figure 4.3- Cell C Force Design Criteria

Cell C accepted most of the Tiger Team FDCr, but added greater detail to the provided FDCr as well as including two additional criteria: “Speed of Response” and “Sustainability.” Participants believed that Speed of Response was the most important FDCr in a nod to the idea that often the force that gets on scene first is the winning force regardless of its capabilities. While this does not necessarily mean that every FDC needs to be fast, it does highlight the importance that a theater set of FDCs provide sufficient speed of response to the Combatant Commander. When designing a FDC, players believe that the FDC should integrate with the total force to support the overall speed of response for the theater set of FDCs. Each deploying force should be seen as part of a whole force. Like Cell B, they added Sustainability as a key to developing the right FDCs. They believed in the importance and essential nature of considering how a total force will be capable of sustaining deployed forces across an extended area, a range of mission sets and multiple deployment cycles. Players also believed that flexibility coupled with adaptability was necessary to meet mission-oriented objectives that often change within the deployment cycle. A single-purpose force would not meet Combatant Commanders’ inherent needs. Integration was also a key FDCr since FDCs were seen as a standing force package which requires internal and external to higher and adjacent forces command and control. Other important FDCr includes interoperability with Joint and Special Operations Forces and scalability to meet mission requirements.

Force Deployment Construct Highlights by Cell

The following player generated alternative FDCs were shaped by the experience of game play. They were not critically evaluated for engineering, logistics or financial considerations. Players were asked to free think based on desired operational capabilities while applying some reason and experience as their limit. Player discussions regarding the FDCs significance in meeting the

demands of the Combatant Commander in steady state and crisis response requirements were captured and serve as a narrative of those highlighted. The FDC description consists of a brief depiction of the FDC, its capabilities and activities, modifications made, and examples of their use. No single alternative FDC should be viewed as a suggested solution or even a possible force for experimentation.

Cell A

Cell A began with a set of FDCs that most resembles the current operational structure utilized in theater. Cell A modified their FDCs to address the lack of connectors and units necessary to conduct steady state and crisis response missions. During the game, Cell A highlighted the following FDCs.

FDC A-1

FDC A-1 was built around a Carrier, Fixed Wing Aircraft, Nuclear (CVN) with a small, embarked Special Purpose Marine Air/Ground Task Force (SPMAGTF) with air mobility. It has significant operational capabilities toward specific mission sets including MCO, Strategic Deterrence Strike, Crisis Response, Engagement, Theater Security Cooperation (TSC), Amphibious Raid, FHA/DR, and Anti-Piracy Operations. Tactical capabilities of the FDC are Anti-Surface Warfare (ASuW), Anti-Submarine Warfare (ASW), Air and Missile Defense (AMD) & Ballistic Missile Defense (BMD), Maritime Domain Awareness (MDA), Sea-based fire support to forces ashore, Special Operations Forces (SOF) support, Tactical Recovery of Aircraft and Personnel (TRAP), and Maritime Interception Operations (Vessel Boarding, Search and Seizure (MIO (VBSS)). The FDC Command Element consisted of the CSG commander and staff as well as the USMC O-4 commander and staff.

| Composition: A-1 | | | | | | | |
|------------------|--|--|------------|--|-------------------------------------|------------------|---|
| Ships | Connectors | Aircraft | MAGTF-CE | MAGTF-GCE | MAGTF ACE | MAGTF-LCE | USN |
| DDG 1 | | MH-60Rx2 Det 3 | | | | | |
| DDG 2 | | MH-60Rx2 Det 4 | | | | | |
| CVN 1 | C-2A (x2) MH-60Sx2 Det (x2) MV-22x2 Det (x4) | F-35Cx2 Det (x12) F/A-18Ex2 Det 5 F/A-18Fx2 Det (x5) E-2Dx3 (x2) F/A-18Gx5 MH-60Rx2 Det (x2) | CE & Staff | CD HQ HQ Sct 1 O-4 Cdr (x3) WPNS | Rifle Co Rifle Plt Wpns Plt 1 | CLC CLC Plt 3 | CSG Staff CVW Staff DESRON Staff EOD MOB Det 2 |
| CG 1 | MH-60Sx2 Det 3 | | | | | | |
| SSN 1 | | | | | | | |
| AO 1 | | | | | | | Ø EST Exped Security Tm 1 |

Figure 4.4- Force Deployment Construct A-1

Players made the following changes to refine this FDC. Players removed a Joint High Speed Vessel (JHSV) as they saw this providing insufficient ability to support the movement of Marine forces on and off the CVN due to the challenges of transferring personnel at sea and the need for a port and escorts. In order to provide greater utility, players added eight MV-22s to provide the Marine forces with mobility. This step provided lift sufficient to support raids or ground strikes from a range that kept the CVN in its normal operating area and generally outside any Anti-Access/Area Denial (A2/AD) threat. The players saw this as adding a capability to the force without changing its operating character. In order to accommodate the MV-22s on the CVN, players removed eight F/A 18s and added them to another FDC. Players recognized that while this action reduced the aviation strike capability, it was a tradeoff that increased flexibility. Players felt that adding the MV-22s allowed them to use the Marine force as a long range raid force integrated with the carrier air wing. It provided a new capability to this force while preserving the operational character of the FDC: standoff power projection from the sea. Additionally, an Explosives Ordnance Disposal Mobile (EOD MOB) Detachment was added to handle expeditionary ordinance handling capability as well as a platoon from the Combat Logistics Company (CLC) to provide logistics support capability.

A-1 fulfilled presence and deterrence requirements and provided an on call surge capability. For most of the game, players held this FDC in reserve in case of crisis while other suitable FDCs carried out steady state missions. This “down time” provided the CVN with sufficient opportunities to train for MCO. Players utilized A-1 in all three crisis injects, signaling high demand during contingency operations. During the first crisis inject, a NEO, time and distance were critical factors in players’ response. Players selected A-1 because it was closest and provided the quickest response over more optimal FDCs that were further away. While the CVN was not an ideal NEO platform, the embarked Marines conducted security operations and the MV-22s had the lift capability to enable rapid response until FDC A-2’s arrival. In the second crisis inject, players responded with a combination of FDC A-1 and FDC A-3 along with air assets from other FDCs to provide speed of response. Players used A-1 to gain sea control and then followed with the Marine element that went ashore to take on the insurgents. In the third crisis inject, players combined A-1 with the rest of the FDCs to respond to MCO.

FDC A-2

FDC A-2 was built around an Amphibious Assault Ship (LHD) with two Landing Ship, Dock (LSDs), surface combatants and an embarked MAGTF with air and surface mobility. Its capabilities can be used in such operations as Engagement, TSC, Advance Force Operations, Amphibious Assault, Amphibious Raid, NEO, FHA/DR, Stability Operations, Strike, and Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: TRAP, Aviation from Shore, Airfield/Port Seizure, Aviation Operations, Intelligence, Surveillance, and Reconnaissance (ISR), MDA, Sea-based fire support to force ashore, ASuW, MIO (VBSS), ASW, AMD & BMD, Search and Rescue (SAR), and Creation of Lodgments. Its Command Element consists of the PHIBRON Commander and staff as the Commander, Amphibious Task Force (CATF) and the Marine Expeditionary Unit (MEU) commander and staff as the Commander, Landing Force (CLF).

| Composition: A-2 | | | | | | | |
|------------------|----------------------|---|---|---|---|---|-----|
| Ships | Connectors | Aircraft | MAGTF-ACE | MAGTF-GCE | MAGTF-ACE | MAGTF-ACE | USN |
| DDG 3 | | MH-60R x1 Det 8 | | | | | |
| DDG 4 | | MH-60R x1 Det 9 | | | | | |
| LHD 1 | | LCU 4 LCAC 1 CRRC x 6 MH-60S x2 Det 4 UH-1Y x1 MV-22 x2 Det (x2) | MEU HQ HQ & Staff INTEL Det H&S Service Co 1 Radio Bn det (REIN) Commo Bn Det (REIN) LE Force Recon Pft | MEU MEU MI Det Anglo Inf Bn HQ & Service Pt LAAD Det MALS MACG Cbt Rifle Co 2 (Rein) Eng Pft (REIN) 1 MWSS MWCS | Maint CLB HQ & Service Pt CLB Commo Pt Health Services Health Services Pft | PHIBRON Staff PHIBRON Staff TACRON TACRON Staff FST Fleet Surgical Team 1 AIMD BMU Group Det EOD MOB EOD MOB Det 1 | |
| LSD 1 | LCU (x2) | | | Rifle Co 3 Artiller Etry AAV Pft 4 | | Maint CLB Maintenance Pft Landing Support Landing Spt Pft | |
| LSD 2 | LCU 3 CRRC x (x2) | | | Rifle Co 1 WPNS Co 1 Weapons | | Motor Transpo CLB Motor Transpo Pft Supply CLB Supply Pft Eng Pft | |
| T-40 2 | | | | | | Ø EST Exped Security Tm 2 | |

Figure 4.5- Force Deployment Construct A-2

Players found utility in most of A-2's construct since it was the closest thing to a MEU and made limited changes to it. The changes they made were moving assets to increase the capabilities of other FDCs. Players regarded FDC A-2's expeditionary medical and dental staff as well as

connectors that provide ship to shore and intra-theater lift, as highly useful for steady state engagements.

During the steady state laydown activity, players felt that A-2 was the most flexible FDC and used it to meet a number of TSC requirements. The cell noted that A-2 was structured very similarly to the 31st MEU, which is HA/DR heavy. A-2 has ability to work as a consolidated force or as three different ships. While players kept A-2 intact for the most part, they split off the two LSDs as needed. Players were concerned that all of the BLT's weapons company would be on one ship if the LSDs separated. Players stated the weapons company would be on a LHD and LSD during split Amphibious Ready Group (ARG) operations.

Because of its high utility and operational flexibility, A-2 was in high demand. Players sought to employ A-2 to respond to all three crisis injects. They considered this FDC as their "ace in the hole" in crisis situations. For the first crisis, players felt that A-2 would have provided an excellent solution to the NEO since it possessed a heavy NEO package, the forces to conduct security, and the medical personnel to address health issues. They considered pairing this FDC with A-3 to provide the additional heavy rotary lift that it lacked. However, A-2 was not close enough to arrive in time. Instead, players used A-1 which was the closest FDC and provided the speed of response. In the second crisis, players also considered using A-2 to provide sea and air control but there were other capable FDCs, A-1 and A-3, that were closer. For the third crisis, players aggregated all the theater FDCs to conduct MCO.

FDC A-3

FDC A-3 was built around the Amphibious Transport Dock (LPD) ship capable of TSC and crisis response. It contained surface combatants, MSC ships, and a small, embarked MAGTF with air and surface mobility. Its capabilities can be used in such operations as Engagement, TSC, Amphibious Raid, Advanced Force Operations, NEO, FHA/DR, Crisis Response, and Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: TRAP, Aviation from Shore, MIO (VBSS), ISR, Strike, Sea-based fire support to force ashore, ASuW, ASW, AMD & BMD, SAR, and Creation of Lodgment. Its Command Element consisted of the LPD commander and staff as the CATF and the infantry battalion commander and staff as the CLF.

| Composition: A-3 | | | | | | | |
|------------------|-----------------------------------|--|--|---|--|---|---------------|
| Ships | Connectors | Aircraft | MAGTF-CE | MAGTF-GCE | MAGTF-ACE | MAGTF-LCE | GSN |
| DDG 5 | | MH-60R2 Det 5 | | | | | |
| LCS 2 | | MH-60Rx1 Det 10 MQ-8Bx2 Det 1 | | | | | |
| LPD 1 | LCAC (x2) CH 53Ex2 Det (x2) | Grp 3 STUAS-4 | H&S Inf Bn HQ & Service Co 2 Rifle Co 5 Btry HQ Artillery Bn 3 HQ Artillery Plt EFSS Plt CO HQ LAR CO HQ LAR Plt (x3) | MALS Det 3 MACG MACG Det 3 MWSS MWSS Det 3 MWCS MWCS Det 3 | CLC 1 Company HQ CLC Plt (x2) | FST Fleet Surgical Team 2 AIMD AIMD 2 | |
| LMSR 1 | | | | | | EST Exped | Security Tm 4 |
| MLP 1 | LCAC (x3) | | | | | | |
| T-AKE 1 | UH-1Yx2 | | | | | EST Exped | Security Tm 3 |

Figure 4.6- Force Deployment Construct A-3

To the players, the original configuration of A-3 looked like a piece of a disaggregated ARG. They noticed that the Large, Medium, Speed Roll-On/Roll-Off (LMSR) and Mobile Landing Platform (MLP) ships lacked connectors. Players refined this FDC by adding three Landing Craft Air Cushion (LCACs) to serve as connectors for the MLP as well as four Group 3 Small Tactical Unmanned Aircraft Systems (STUAS) to the LPD which has the ability to launch them. The addition of the LCACs provided more connectors and an at-sea surface transfer capability. The STUAS provided ISR support capability.

This FDC was useful as an independent executor of TSC missions. It was in high demand throughout the steady state force allocation portion of the game. However, during crisis response missions, this force required aggregation with other forces. Specifically, players combined this FDC's ISR assets with A-1 air assets to assist in execution of crisis inject two.

FDC A-4

FDC A-4 was a land-based SPMAGTF with air and surface mobility. Its capabilities can be used in such operations as Engagement, TSC, FHA/DR, Crisis Response, Aviation from Shore, small scale Raid, Advanced Force Operations, and Stability Operations. Its Command Element consisted of the Infantry Battalion commander and staff and the Marine Air Group (MAG). Players saw A-4 not only as a heavy Quick Reaction Force (QRF) with limited aerial delivery but also as a TSC centric squadron.

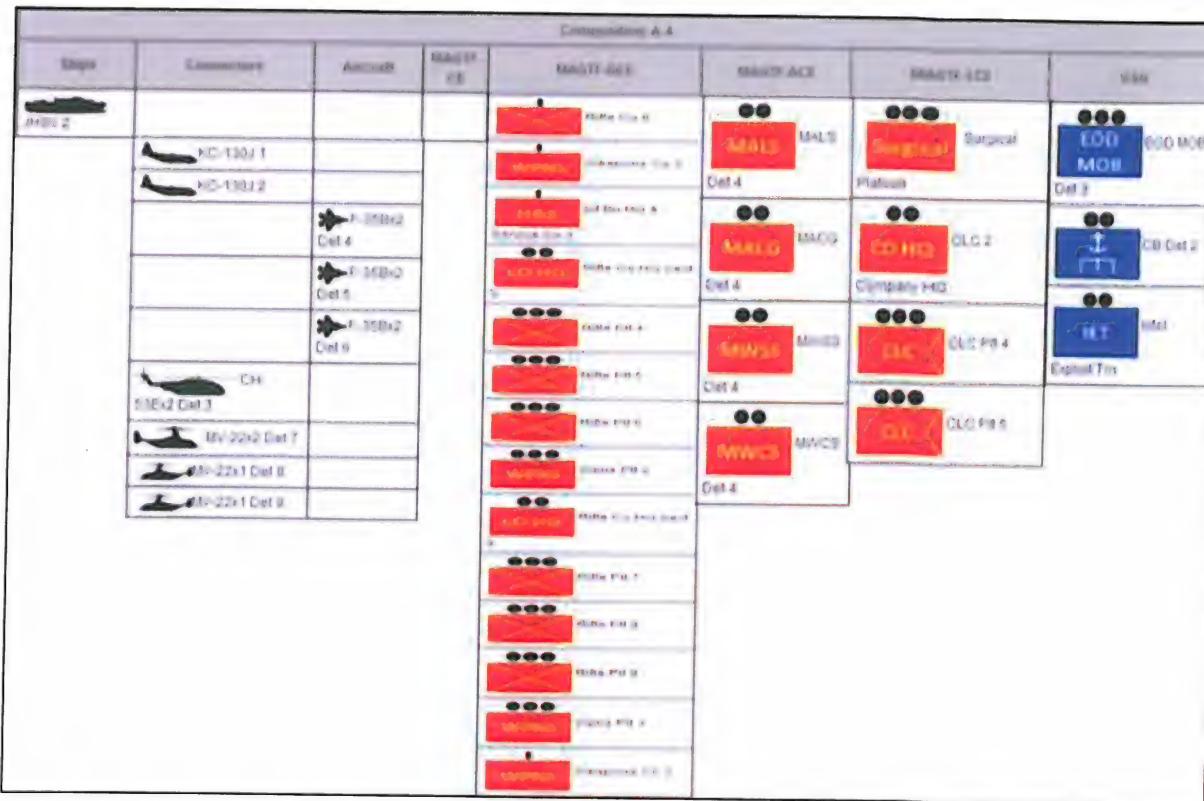


Figure 4.7- Force Deployment Construct A-4

A-4 originally had 12 MV-22s and was left with only four when players moved a majority of the MV-22s to A-1. Players compensated for its degraded power projection capability by providing it lift through a JHSV to support the increase in forces thus allowing it to establish a heavier response force with flexibility for the COCOM. They included additional strike capability in the form of six F-35Bs, which were tethered to those ground forces. These forces include an Infantry Battalion Headquarters and Service company, two weapons companies, two weapons platoons, two rifle company headquarters sections, five rifle platoons, a surgical platoon, a Construction Battalion (CB) Detachment, an EOD MOB Detachment, and an Intelligence Exploitation Team. Players noted that A-4 still lacked rotary and close air support to assist with missions.

Players based A-4 at a centrally located land base in the AO. The JHSV gave A-4 the inter-theater lift that allowed it to operate around multiple islands. Players combined A-4 with all the other FDCs to respond to the final crisis inject dealing with MCO.

Cell B

Cell B developed FDCs that were broken up into small packages designed to address phase 0 operations. During game play, the players explored the concept of distributing small Marine detachments aboard non-traditional platforms. Cell B participants highlighted the following FDCs during the game.

FDC B-1

FDC B-1 was built around a CVN with a small, embarked Landing Team with air mobility. Its capabilities can be used in such operations as MCO, Strike, Crisis Response, Engagement, TSC, Amphibious Raid, FHA/DR, and Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: ASuW, ASW, AMD & BMD, MDA, Sea-based fire support to force ashore, SOF support, TRAP, MIO (VBSS). Its Command Element consists of the CSG commander and staff.

| Composition: B-1 | | | | | | | |
|------------------|-------------------|--|----------|--|-----------|--|---|
| Ships | Connectors | Aircraft | MAGTF CE | MAGTF-GCE | MAGTF ACE | MAGTF LCE | USN |
| DDG 1 | | | | Rifle Plt 3 | | | |
| CVN 1 | C-2A (x2) (x3) | F-35Cx2 Det (x12) F/A-18Ex2 Det (x5) F/A-18Fx2 Det (x5) E-2Dx3 (x2) F/A-18Gx5 MH-60Rx2 Det (x2) | | | | | <div style="display: flex; justify-content: space-between;"> <div style="flex: 1;"> <div style="border: 1px solid blue; padding: 2px;">CSG Staff</div> <div style="border: 1px solid blue; padding: 2px;">CVW Staff</div> <div style="border: 1px solid blue; padding: 2px;">DESRON Staff</div> <div style="border: 1px solid blue; padding: 2px;">EOD MOB</div> </div> <div style="flex: 1;"> <div style="border: 1px solid blue; padding: 2px;">CSG Staff</div> <div style="border: 1px solid blue; padding: 2px;">CVW Staff</div> <div style="border: 1px solid blue; padding: 2px;">DESRON Staff</div> <div style="border: 1px solid blue; padding: 2px;">EOD MOB Det 5</div> </div> </div> |
| CG 1 | | MH-60Rx2 Det | | Rifle Plt 2 | | | |
| T-AKE 1 | MH-60Sx2 Det | | | <div style="display: flex; align-items: center;"> CO HQ Rifle Co HQ <div style="border: 1px solid red; padding: 2px;">Sect 1</div> <div style="border: 1px solid red; padding: 2px;">Rifle Plt 1</div> <div style="border: 1px solid red; padding: 2px;">WPNS</div> <div style="border: 1px solid red; padding: 2px;">WPNS Plt 1</div> </div> | | <div style="display: flex; align-items: center;"> EST Exped Security/Tm 2 <div style="border: 1px solid blue; padding: 2px;">CB Det 1</div> </div> | |
| T-AD 1 | | MV-22x2 Det 1 | | | | | <div style="display: flex; align-items: center;"> EST Exped Security/Tm 1 </div> |

Figure 4.8- Force Deployment Construct B-1

Cell B had some initial discussion on assigning a Submarine, Attack (SSN) to B-1 to make it available to the CSG staff. However, they reversed that decision, and the SSN remained with its original FDC with the intent of assigning the SSN to CSG staff as needed. The players moved four MH-60Rs within B-1, from the Destroyer, Guided Missile (DDG) to CVN because players knew that certain types of DDGs, were physically unable to hangar the aircraft. They also felt placement of the helos on the CVN provided greater inward mobility. In order to provide host nation interface contracting with forces aboard ship, Cell B added a combat logistic support cell to the FDC. Players also felt the need to add rapid onsite NECC support to the CVN. This EOD Mobile Detachment partnered with the CVN, and its connectors provided an ability to quickly support crisis response with EOD assets.

B-1 was a modified CSG with USMC assets placed aboard the CVN, the DDG, and a T-AKE. Overall, players felt that B-1 could have benefited greatly from having more air and surface connectors to strengthen the FDC's response capabilities. Players in the cell did discuss the option of placing MV-22 or CH-53 assets on the CVN. However, while not depicted on the slide above, players decided to tether the MV-22 to the FDC to provide lift to the USMC ground elements providing the FDC with a ready option for rapid employment.

Players utilized FDC B-1 to respond to both the NEO and MCO crises. For the NEO, the cell broke the theater set of FDCs into two positions, one for immediate response and another for follow-on support. Players wanted to rapidly respond with some show of support force. For initial response, using the C-2A and MH-60B lifting a CO (-) they used B-1 for embassy reinforcement with further support from B-1 arriving with the naval platforms.. For the response to the MCO inject, players believed that everything in the AOR would eventually be used. Initially, the CVN was located in the ideal place to respond by providing immediate sea control and air superiority with the presence of additional strike capability in the form of the F-35s.

FDC B-23

Toward the end of the game, Cell B developed B-23 as a new FDC to provide a sea-basing enabling capability. B-23's MPSRON assets provided equipment and sustainment for aggregation of naval forces. It also provided logistics sustainment to dispersed naval forces. However, as players noted, assumptions about force laydown options need to be re-examined. These assets can conduct stand-alone steady-state TSC events and limited crisis response. This FDC operationalizes pre-positioning assets, which will require external air and surface connectors with limited husbanding.

| Composition: B-23 | | | | | | | |
|-------------------|------------|----------|----------|-----------|-----------|-----------|-----|
| Ships | Connectors | Aircraft | MAGTF-CE | MAGTF-GCE | MAGTF-ACE | MAGTF-LCE | USN |
| LMSR 1 | | | | | | | |
| MLP 1 | | | | | | | |
| T-AKE 4 | | | | | | | |
| | LCAC 4 | | | | | | |
| | LCAC 5 | | | | | | |
| | LCAC 6 | | | | | | |
| | LCAC 7 | | | | | | |

Figure 4.9- Force Deployment Construct B-23

Cell B participants wanted a sea-based enabling capability with a more responsive logistic support but did not use it in game play because there was not enough time. However, players knew that this capability was needed. Cell B created this new FDC using such assets as the MLP, T-AKE, and LMSR from B-16 and LCACs to provide connectors for the MLP. It will have utility working with countries to conduct TSC and training forces on the MLP when they might not be able to train on land.

Players believed that depending on where this FDC is stationed, it offered an ability to aggregate and potentially get optimal use. Players felt that if they had more time in the game to explore steady state missions, they could have figured out where to put this FDC for maximum utilization and effect.

FDC B-2

FDC B-2 was built around the LHD with embarked Landing Teams with air and surface mobility. Its capabilities can be used in such operations as Engagement, TSC, Amphibious Raid, Advanced Force Operations, NEO, FHA/DR, Stability Operations, and Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: MIO (VBSS), TRAP, Aviation from Shore, Airfield/Port Seizure, Aviation Operations, ISR, MDA, SAR and Creation of Lodgments. Its Command Element consisted of the PHIBRON commander and staff as the CATF and the MEU commander and staff as the CLF.

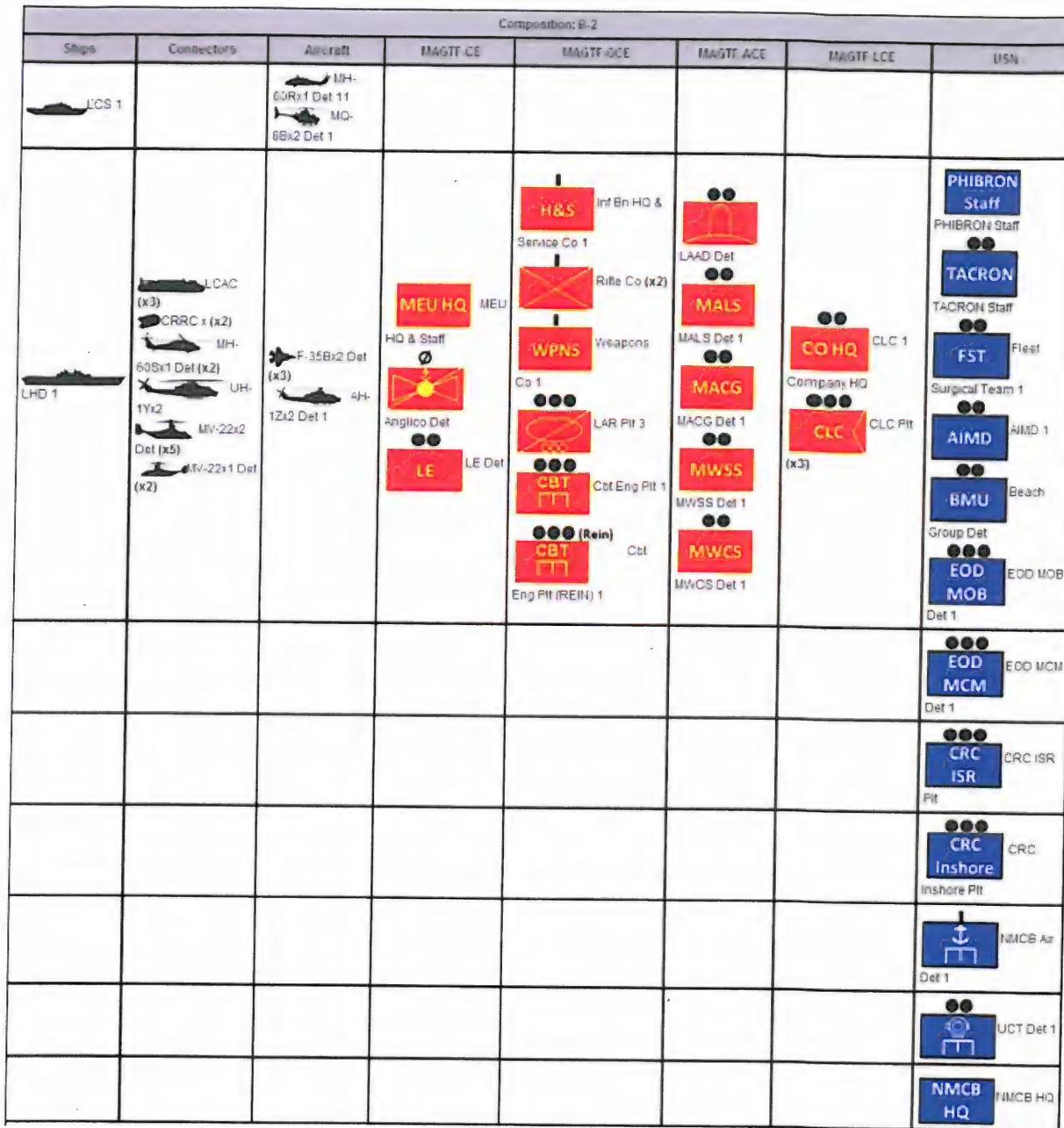


Figure 4.10- Force Deployment Construct B-2

The LHD in B-2 served as the nucleus of the FDC with Ground Combat Elements (GCE) and the necessary connectors. Players felt this FDC lacked an Air Combat Element (ACE), so they added six F-35Bs for strike and EW capability. They also added a Littoral Combat Ship (LCS), bringing together two main platforms to enhance the FDC capabilities with better protection and sensor platforms.

Initially, Cell B added a surgical platoon for additional ashore capabilities beyond the Fleet Surgical Unit already assigned. However, they later removed the unit due to the limited flexibility of placing them aboard the LHD. Players believed the Fleet Surgical Unit was better ashore where it could be rapidly deployed as needed. To address the balance of the ACE, they removed two MV-22 detachments and placed them ashore, thus making room for the F-35B detachments on the LHD. They also removed two AH-1Zs and replaced them with two UH-1Ys to allow a partnering with AH-1Y which enables mutually supportive sensor and shooter operations. The cell also assigned numerous NECC assets to the FDC. Players added a NMCB Air Detachment, a Coastal Riverine Company (CRC) Inshore Platoon, an EOD MCM (Mine Countermeasure) Detachment, a CRC ISR Platoon, and an Underwater Construction Team (UCT) Detachment to provide rapid NECC support as needed. These units were not physically embarked on the LHD; rather they were tethered to provide the support needed. To enable better C2 of all of these NECC units, a NMCB Headquarters was added to the LHD. The final addition to the FDC was to include an LCS to provide the protection and ISR platforms needed.

As a strike package with ISR assets, FDC B-2 was used in both the NEO and MCO crisis injects. B-2 was used in the initial wave of response for the NEO providing lift from the MV-22s to two companies of Marines to secure air and sea ports. For the MCO response, where everything was required on scene, B-2 arrived in the AO, following one to two weeks of transit time.

FDC B-6

FDC B-6 consisted of multipurpose, littoral, subsurface combatants and significant strike capability with an embarked Landing Team with air and surface mobility. Its capabilities can be used in such operations as Strike, Engagement, Crisis Response, TSC, Amphibious Raid, Advanced Force Operations. B-6 tactical capabilities allow it to perform the following missions: ISR, MIO (VBSS), ASuW, TRAP, and Aviation from Shore. Its Command Element has the SSGN commander as the CATF and the Recon company commander as the CLF.

| Composition: B-6 | | | | | | | |
|------------------|------------|-----------------------------|---|------------------------|--|------------------------------|----------|
| Ships | Connectors | Aircraft | MASTF-CI | MASTF-GCE | MASTF-ACE | MASTF-LCE | USN |
| LCS 2 | UH-1Yx1 | MQ-8Bx2 Det | | | | | |
| SSGN | CRRC x 6 | | Force Recon Ptl | | | | |
| T-AKE 2 | CRRC x 10 | STUASx4 AH-1Zx2 Det 2 | Gp 3 INTEL Radio Bn Det (REIN) (REIN) Commo Bn Det | Mi Det Recon Co | MALS Det 3 MACG Det 3 MWSS Det 3 MWCS Det 3 | MALG MWSS MWCS | |
| | | | | | | EOD MOB Det 4 | EOD MOB |
| | | | | | | ISR Tm | CRC ISR |
| | | | | | | CB Det 5 | CB Det 5 |

Figure 4.11- Force Deployment Construct B-6

B-6's SSGN, LCS, T-AKE, and associated assets served as an ISR task group for the Combatant Commander. Despite not having the amphibious assets traditionally assigned to it, B-6 still provided light assault support with Recon capability. In addition to assault units, players also added attack helicopters making this FDC a littoral ISR strike hunter/killer team as envisioned. This FDC also had NECC units tethered to the T-AKE to support as needed. The cell included a CB Detachment, an EOD MOB Detachment, a CRC ISR Team, a CB Detachment, an EOD Mobile Platoon, and a CRC ISR Team to this construct.

This FDC was used in all three crises injects: NEO, Strike, and MCO. Players believed this FDC was an innovative combination of platforms and units such as the SSGN, LCS, and ISR assets. This FDC may be further leveraged by including riverine forces within the T-AKE and could be a critical enabler when combined with other FDCs. Specifically during the Strike inject, players found that while the FDC provided a clandestine insertion option with the Recon companies located on the SSGN, it lacked significant reinforcement capability should the need arise for a QRF.

Cell C

Cell C's approach centered on building capabilities as a balanced force that can operate as separate entities yet aggregate as required. In order to build these FDCs, they dissolved the ARG/MEU. The following FDCs were highlighted by the players during the game.

FDC C-1

FDC C-1 was built around a CVN and includes an LPD, surface combatants, and a small embarked MAGTF with air and surface mobility. Its capabilities can be used in such operations as MCO, Strike, Crisis Response, Engagement, TSC, Amphibious Raid, FHA/DR, and Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: ASuW, ASW, AMD & BMD, MDA, Sea-based fire support to force ashore, SOF support, TRAP, MIO (VBSS). Its Command Element consisted of the CSG commander and staff as the CATF and the CLB battalion commander and staff as the CLF.

| Composition: C-1 | | | | | | | |
|------------------|---|--|--|---|------------------------------|---|---|
| Ships | Connectors | Aircraft | MAGTF CE | MAGTF GCE | MAGTF ACE | MAGTF LCE | USA |
| DDG 1 | | MH-60Rx2 Det 2 | | Rifle Plt 5 | | | |
| CVN 1 | C-2A (x2) MH-60Sx2 Det (x4) | F-35Cx2 Det (x12) F/A-18Ex2 Det (x5) F/A-18Fx2 Det (x5) E-2Dx3 (x2) F/A-18Gx5 MH-60Rx1 Det (x3) | O-4 Cdr & Staff | | | | CSG Staff CSG Staff CVW Staff CVW Staff EOD MOB EOD MOB Det 2 |
| CG 1 | | MH-50Rx2 Det 1 | | | | | |
| SSN 1 | | | | | | | |
| LPD 1 | LCU 1 CRRC x6 Mv-22x2 Det (x2) | Force | CO HQ Co HQ Sect 2 (x2) WPNS WPNS Weapons Co 3 AAV Plt 1 | Rifle Rifle Plt Wpns Plt 2 Rifle AAV Plt 1 | MALS MACG MWSS MWCS | H&S Service Plt Commo Plt Maint Motor Transpo Transpo Plt Landing Support Landing Spt Plt Supply Health Services Health Services Plt Surgical Platoon Eng Plt | CLB HQ & CLB CLB CLB CLB Motor CLB CLB Supply CLB Surgical Eng Plt |
| T-AO 1 | | | | | | | Ø EST Exped Security Tm 1 |

Figure 4.12- Force Deployment Construct C-1

C-1 added SSN interoperability to the FDC which requires workup and training to aggregate and conduct ASW, ASuW, and MCO. Even though this construct may be difficult to pull together,

players felt this grouping increased the FDC's overall capabilities. Players provided an EOD MOB Detachment to the CVN to increase support for Strike Operations. Players also added an O-4 commander and staff to the CVN to provide C2 for USMC forces afloat. Since players felt that C-1 served as the heavy logistics responder, they recommend moving a surgical platoon to the LPD in order to provide speed of response. While having great logistic support, players added four MV-22s to the LPD to increase the strike capability of this FDC.

Due to the historically low maintenance and high readiness rates of the MV-22, players thought C-1 would be better equipped to support TRAP and other heavy strike missions. Originally this FDC had two DDGs; however players moved the second DDG to another FDC to provide it with flexibility in the theater set of FDCs for BMD.

Since the ARG/MEU was not in a traditional structure as many players were accustomed to, they tried to organize this FDC as a MAGTF with greater naval capabilities. This FDC was a better option for strike-like mission sets. The cell believed that while the responding forces for a Combatant Commander may not be the best FDC to use, it was what they had available at the time.

FDC C-2

FDC C-2 was built around a LHD and LSD with surface combatants, MSC, and an embarked MAGTF with air and surface mobility. Its capabilities can be used in such operations as Engagement, TSC, Amphibious Assault, Amphibious Raid, Stability Operations, Advanced Force Operations, NEO, FHA/DR, and Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: MIO (VBSS), TRAP, Aviation from Shore, Airfield/Port Seizure, Aviation Operations, ISR, MDA, Strike, Sea-based fire support to force ashore, ASuW, ASW, AMD & BMD, SAR and Creation of Lodgments. Its Command Element consisted of the PHIBRON commander and staff as the CATF and the MEU commander and staff as the CLF.

| Composition: C-2 | | | | | | | |
|------------------|--|---|---|---|--|-------------------------------------|---|
| Ships | Connectors | Aircraft | MAGTF CE | MAGTF GCE | MAGTF ACE | MAGTF LCE | USN |
| 3 DDG | | MH-60Rx2 Det 4 | | | | | |
| LHD 1 | LAC (x3) MH-60Sx2 Det 4 CH-53Ex2 Det 3 CH-53Ex1 Det 4 MV-22x2 Det (x4) | UH-60 Grp 3 STUAGx4 F-35Bx2 Det (x4) 12x2 Det 1 | MEU HQ HO & Staff INTEL Anglico Det Radio Bn det (REIN) Comm Bin Det (REIN) LE | MEU Rifle Co 1 Recon Plt LAR CO HQ LAR Ptn (x3) Cat Eng Ptn (REIN) 1 | LAAD Det MALS MALS Det 2 MACG MACG Det 2 MWSS MWSS Det 2 MWCS MWCS Det 2 | | PHIBRON Staff PHIBRON Staff TACRON TACRON Staff FST Surgical Team 1 AIMD AIMD 1 BMU Beach Group Det EOD MOB EOD MOB Det 1 |
| 1 LSD | LCU (x2) | | | Rifle Co 2 WPNS Co 1 Btry HQ Btry 3 HQ Artillery Artillery Ptn EFSS Ptn AAV Ptn 2 | | CLC 1 Company HQ CLC Ptn (x2) | |
| T-AKE 1 | | | | Rifle Co 3 | | EST Security Tm 3 | Exped |
| T-AD 2 | MH-60Sx1 Det 6 | | | | | EST Security Tm 2 | Exped |
| | CH-53Ex1 Det 5 | | | H&S Inf Bn HQ & Service Co 1 | | | |

Figure 4.13- Force Deployment Construct C-2

Cell C removed 4 F-35Bs and replaced those assets with 6 CH-53Es to increase C-2 existing capability to respond to crises. They also added an Infantry Battalion HQ & Service Company to increase existing capability for crisis response. Players also found benefit from adding LCACs to the LHD in order to maximize the well deck capacity. Cell C also discussed adding another DDG to support BMD missions and as ADU, but believed just one DDG would suffice. They subsequently decided to move the additional DDG to another FDC to increase theater FDC support for BMD.

Players felt that this FDC can become the nucleus for aggregating forces as they respond to crisis since it was built around the LHD and has the MEU Command and PHIBRON staff. Players primarily felt satisfied with this particular construct as it was and left it unchanged.

FDC C-3

FDC C-3 was built around an LSD, littoral and surface combatants, and embarked landing force with surface mobility. Its capabilities can be used in such operations as Engagement, TSC, Amphibious Raid, NEO (Surface only), Crisis Response, Strike FHA/DR, Anti-Piracy Operations. Its tactical capabilities allow it to perform the following missions: MIO (VBSS), TRAP, Airfield/Port Seizure, ASuW, MDA, ISR, SAR, Maritime Patrol, Natural Resources Protection, and Maritime Expeditionary Security Operations. Its Command Element consisted of the LSD commander and staff as the CATF and the infantry battalion commander and staff as the CLF.

| Composition: C-3 | | | | | | | |
|------------------|---------------------------|------------------|--|---------------|------------------|----------------------|------------|
| Ships | Connectors | Aircraft | MASTIFF | MAINT-AE | MAINT-ACE | MAINT-LCE | USN |
| DDG 4 | | MH-60R2 Det 5 | | Rifle Plt 3 | | | |
| LCS 1 | | MQ-8Bx2 Det (x2) | | | | | |
| LCS 3 | | MH-60R2 Det 7 | | | | | |
| LSD 2 | LCU 4 RCB CRRC # 10 | | H&S Service Co (x2) Rifle Co 4 CO HQ Rifle Plt (x2) WPNS CO HQ CBT AAV Plt 3 Tank Plt | | CLC CLC Plt 3 | CRC ISR Plt ISR | CRC ISR Tm |
| LKE 4 | | | | | | EST Security Tm 7 | Exped |
| | | | Artillery Bay 1 | | | | |
| | | | | MALS Det 5 | | | |
| | | | | MACG Det 5 | | | |
| | | | | MWSS Det 5 | | | |
| | | | | MWCS Det 5 | | | |
| | | F-35Bx2 Det 7 | | | | | |
| | | F-35Bx2 Det 8 | | | | | |
| | | F-35Bx2 Det 9 | | | | | |
| | CH-53Ex2 Det 1 | | | | | | |
| | CH-53Ex2 Det 2 | | | | | | |

Figure 4.14- Force Deployment Construct C-3

Cell C believed that FDC C-3 needed to be more self-sufficient, so they added a T-AKE to provide it with logistical support. They also included an Expeditionary Security Team on the T-AKE to provide force protection. Players removed the JHSV and based it in port to provide any potential landing forces with heavy lift capability.

Players removed 2 MQ-8Bs to make space for the addition of two MH-60Rs to provide the LCS with more flexibility to support ASuW, ASW, and MCM missions. The cell tethered the CH-53E and F-35Bs assets from the shore to the FDC and also increased the number of CH-53Es to support strike options. To assist with the increase in aviation asset maintenance and support, players added the following units: a Marine Aviation Logistics Squadron (MALS) Detachment, a Marine Wing Support Squadron (MWSS) Detachment, and a Marine Wing Communications Squadron (MWCS) Detachment. Finally, the cell added an artillery battery and a Tank Platoon to enhance crisis response capabilities.

FDC C-4

FDC C-4 was a sea-based, SPMAGTF-TSC embarked on MSC ships with surface combatant and air mobility. Its capabilities can be used in such operations as Strike, Engagement, TSC, Amphibious Raid, NEO, FHA/DR, Crisis Response, and Stability Operations. Its tactical capabilities allow it to perform the following missions: MIO (VBSS), ASuW, TRAP, Airfield/Port Seizure. Its Command Element consisted of the DDG commander as the CATF and the USMC O-4 SPMAGTF commander and staff as the CLF.

| Composition: C-4 | | | | | | | |
|------------------|---|----------------|--------------------|--|---|---|--|
| Ships | Connectors | Aircraft | MAGTF CE | MAGTF GCE | MAGTF ACE | MAGTF-LCE | USN |
| DDG 5 | | MH-60Rx2 Det 5 | | | | | |
| LMSR 1 | | | | Rifle Plt 9 LAR Plt 4 Cbt Eng Plt (REIN) 2 CO HQ AAV Co HQ AAV Plt 4 | | | Ø EST Exped Security Tm 6 CB Det (x2) |
| MLP 1 | LCAC 3 MK VI Patrol Boat CRRC x 10 | | | | | | CRC Coastal Coastal Plt |
| T-AKE 2 | MV-22x1 Det 8 | | O-4 Cdr & Staff | CO HQ Sect 3 Rifle Plt 7 WPNS Wpn Plt 3 | MALS MALS Det 3 MACG MACG Det 3 | | DESRON Staff DESRON Staff Ø EST Exped Security Tm 4 |
| T-AKE 3 | MV-22x1 Det 9 | | | Rifle Plt 8 | MWSS MWSS Det 3 MWCS MWCS Det 3 CLC CLC Plt (x3) | Ø CO HQ CLC 2 Company HQ CLC Plt (x3) | Ø EST Exped Security Tm 5 MCAT MCAT Tm |

Figure 4.15- Force Deployment Construct C-4

Players only made one change to this FDC by adding a MK VI patrol boat to provide ASuW and TSC support.

Players considered C-4 as a force afloat with a SP MAGTF entity that can conduct phase 0 and phase 1 missions. The placement of Marines aboard traditional MPSRON shipping platforms makes this particular FDC unique since it operationalizes the MPS squadron. Players stated that this construct requires more experimentation to work out the surface and vertical lift challenges associated with its employment. Players wanted to balance the command element across the theater and use it as needed with the MPS assets afloat to create a larger formation as needed. Ideally, the O-4 staff would work with the DESRON staff.

D. Summary of Player-Derived Themes

Based on the co-occurrence tables provided in the previous section of this game report, three themes emerged as being most important to the players based on the force design criteria and their capabilities. They are as follows:

- Flexibility of Capabilities
- Aggregation of Forces
- Training towards Integration

Flexibility of Capabilities: Each of the three BLUE cells identified flexibility as the key value that must be considered in selecting the appropriate FDC or blending multiple FDCs. Indeed, integrating flexible capabilities within an alternative FDC was deemed essential in responding to the full spectrum of required missions, in both steady state and crisis response. It was determined that flexibility is a core competency of the naval force, and elements must train to these critical capabilities to enable an appropriate speed of response. While each platform or unit will have its own specialties and capabilities, it must also have a set of capabilities and competencies that are common amongst all. These capabilities and competencies should be identified and trained to prior to engagement, in order to be effectively integrated into force theater operations.

Aggregation of Forces: All three player cells emphasized that the aggregation of multiple FDCs would be necessary in the event of a major crisis. Players identified Command and Control (C2) as one of the primary challenges in aggregating and disaggregating the dispersed naval force. They suggested that a clear delineation of command relationships would mitigate the inherent C2 issues involved in aggregating previously dispersed Navy and Marine forces. Additionally, they proposed that integrated staffs should become the norm, with Marine officers routinely assigned to Navy staffs and vice versa, in order to provide cross-service insight and minimize confusion and culture conflicts when aggregation is required in response to a crisis.

Training towards Integration: The players addressed integration in two ways. The first was the further integration of Navy and Marine Corps personnel and platforms to provide a more flexible and capable force. Additionally, integration was addressed by the bringing together of capabilities that have not traditionally been combined. Players identified that training in the concept of force aggregation/disaggregation is essential to effectively integrate these capabilities to accomplish missions. All three cells emphasized that current doctrine and training procedures did not sufficiently address the challenges of force aggregation in response to a major crisis. They suggested that aggregation should become a core competency, and that the training cycle for each FDC should be modified to include exercises involving aggregation up to the level that would be required for major combat operations.

Flexibility of capabilities is an FDCr, which was offered and validated by all three player cells. The other two themes, Aggregation of Forces and Training towards Integration, are emergent themes generated by game participants in support of the combatant commander's steady-state

and crisis response operational mission mandates. The degree to which these themes were evident in each cell's preferred FDC greatly varied

The key to understanding the qualitative visualizations below is that they are simply graphic representations of the weight, which is the strength of player discussions and how they utilized their theater set of FDC, for each theme applied by the player cells. They do not represent a quantitative relationship between the three themes.

For example, as depicted in Figure 4.16, Cell A favored flexibility and training as the predominant themes that would allow them to accomplish mission in both steady state and crisis response.

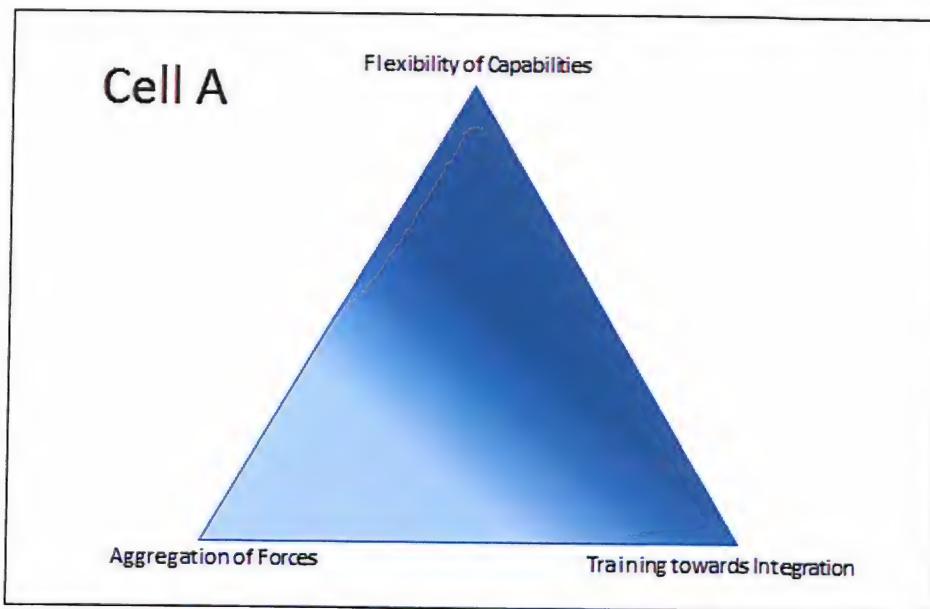


Figure 4.16 – Capability themes identified through game play visualized for Cell A's FDCs

Cell A theater FDCs had a great deal of flexibility (darker shade), based on the mix of capabilities associated with the different platforms and units. In terms of aggregation, while the example FDCs provide limited discussion on the subject, the overall theater set of FDCs did illustrate that some augmentation of capabilities will be gained through aggregation with other FDCs.

Training towards integration (medium shade) was realized in two ways; first with A-1 and A-3 and the need for these FDCs to aggregate with other FDCs, and second with A-3 and A-4 conducting TSC.

As players reviewed their theater set of FDCs they noticed limitations to the original configuration, noting that they could increase the flexibility of FDCs by providing connectors to

fully utilize unit assets aboard various platforms. An example of this was in A-1, players removed F/A 18s to make room for MV-22 detachments aboard the CVN, and by doing so they provided SPMAGTF with an ability to respond to missions across the range of military operations (ROMO). But players believed its primary focus would be on larger scale operations.

While players in Cell A believed that aggregation of force would be necessary for large scale response to crisis, they held that speed of response became more important than mass, by virtue of the FDCs being spread out across the theater. Players designed the FDCs to win the fight in phase 0 and 1; however, when crises evolve, rapid response was their overarching design criteria, believing that forces needed to aggregate at the scene rather than coming together and then responding to crisis. FDCs A-3 and A-4 illustrate this point, due to their strong TSC capabilities, however, when lower end crises develop both of these FDCs are able to meet them due to rapid response platforms and an ability to aggregate with other FDCs.

Players treated training towards integration as having two aspects, an internal and external one. Internal training was required to integrate as a Naval service to meet the needs of the Combatant Commander, especially when platforms and units have not worked together previously. TSC events provided the naval services with training opportunities which allowed them to practice external integration with partner nations.

As depicted in Figure 4.17, Cell B's representation of the three themes via its FDCs appears the most equilaterally balanced.

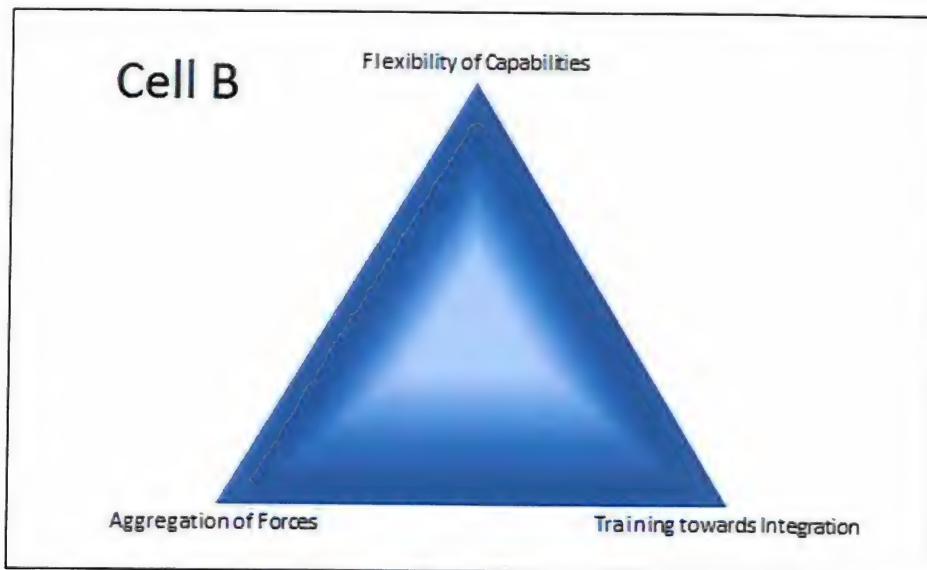


Figure 4.17 – Capability themes identified through game play visualized for Cell B's FDCs

Cell B FDCs were found by players to be well balanced in the areas of Flexibility of Capabilities, Aggregation of Forces and Training towards Integration, thus dark blue all the way around with a white center. The white center is to show that work can always be done for improvement.

Flexibility of the capabilities was very evident in the creation of B-23 during the end of steady state laydown activities. Players felt the need to create an FDC that operationalized MPSRON assets while also providing LCACs as connectors for the MLP. This FDC not only provided TSC capability, but also provided a rapid sustainment option for other FDCs. B-6 was another example of players' creativity when they combined non-traditional assets to create an amphibious package that provided clandestine insertion and persistent ISR. The whole package was an innovative way to bundle platforms and units to provide light assault support with Recon capability.

With the highlighted FDCs, it was noted that they aggregated early to meet steady state missions as often as they could. FDC B-2 was believed to be a great building block for a variety of missions because of its high capability assets making it the most versatile amphibious package with strike. Since it was frequently used as a building block, it was able to aggregate with other platforms/FDCs.

Players believed that training is the biggest challenge to FDCs, especially if some elements are at the opposite spectrum of the warfighting force. Training as an intra FDC force with different functionality is just as hard as multiple FDCs coming together expecting to work. As illustrated with the game, the more FDCs work with each other, the more opportunity to train exists.

In sharp contrast to Cell A, Figure 4.18 depicts Cell C's execution of these three themes, which weighted towards flexibility and aggregation.

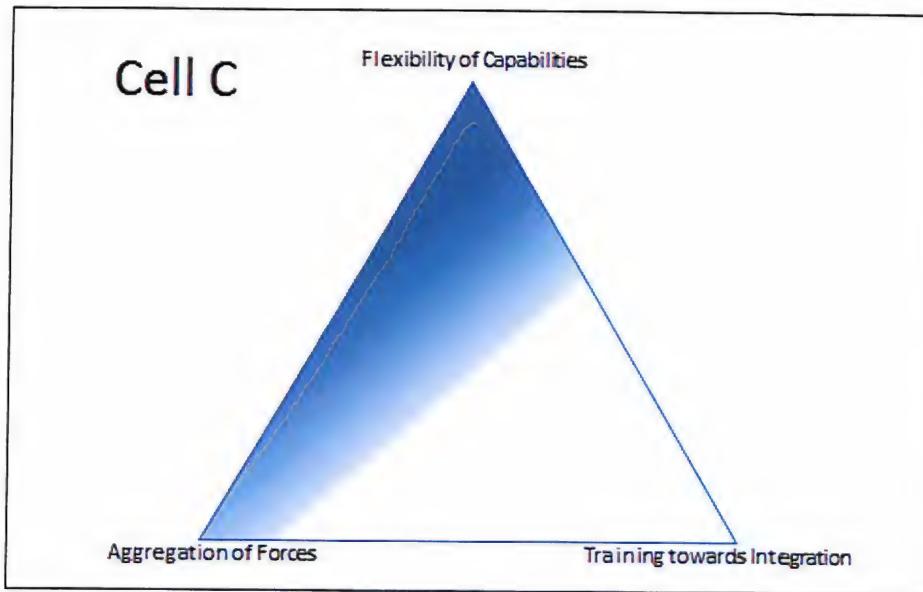


Figure 4.18 – Capability themes identified through game play visualized for Cell C's FDCs

Cell C FDCs have flexible capability (darker shade); however issues will arise when multiple FDCs need to aggregate to respond to high level crisis (light shade). They will be able to integrate internally, but will need training and defined C2 structures to make multiple FDC aggregation possible (almost white).

Although weighted towards flexibility and aggregation, Cell C split up the ARG/MEU and constructed the first four FDCs as balanced force packages that have medium capacity and capability. While not optimal, the theater set of FDCs are positioned for an 80% solution because they have the flexibility to respond, which is key for speed of response, and can plus up as necessary.

Due to the qualities inherent in medium sized balanced forces within their theater set of FDCs, Cell C FDCs were able to handle steady state and low end crises on their own. They were all dispersed evenly throughout the theater, which helped respond quickly. However, when FDCs would need to aggregate in full force, players noted that the absence of a training focus in these constructs would make both aggregation and execution challenging; because historically, components must train together prior to deployments, or they are not generally effective.

E. Responses to NSG 13 Research Questions

As a result of a comprehensive literature review prior to game development, the DCAT identified five research questions germane to applying naval force design criteria and force deployment constructs to response operations, both in steady state and in crisis.

Question #1: What are the principles and force design criteria (FDCr) influencing decision making in the construction and revision of force deployment constructs (FDCs) in order to accomplish a mission in a steady state and during crisis response?

The initial theme identified by players as enabling the most optimal FDCs to effectively respond to a full spectrum of missions in both steady state and crisis response was flexibility of core (also referred to by the players as “critical”) capabilities. Players concluded that it was impossible to design a single FDC that was capable of efficiently accomplishing all possible missions, from theater security cooperation exercises to major combat operations. In addition, core/critical competencies must be identified and forces must train to these capabilities to enable an appropriate speed of response. While each platform or unit will have its own specialties and capabilities, it must also have previously identified core capabilities in order to be effectively integrated into theater operations (however, specifics of these capabilities were not within the purview of the 2013 Naval Services Game).

Constructing a variety of FDCs of differing flexible capabilities is necessary to accomplish steady state missions. However, players understood that forces might need to be disaggregated to accomplish steady state requirements; and would certainly need to be aggregated for crisis response. Players emphasized that the aggregation of multiple FDCs would be necessary in the event of a major crisis. As a result, players identified that training in the concept of force aggregation/disaggregation is essential to effectively integrate these capabilities to accomplish missions.

Lastly, players identified the need to disperse logistics support and connectors as an essential factor in the effective employment of FDCs, in order to ensure sustainability of the force through the ROMO. A significant number of the revisions the players made to the pre-constructed FDCs were made to remedy deficiencies in these areas. They also noted that more dispersed forces would necessitate the spreading of logistics capability over a greater area, requiring that more resources be allocated to logistics in order to ensure the sustainability of dispersed forces.

Question #2: Using a game-provided alternative FDC, what are the issues and challenges that influence interoperability to the forward-deployed naval force?

Effective Command and Control (C2) was a major challenge presented to participants during game play. Because large-scale amphibious operations have not been conducted recently, there is minimal understanding on the best methods for C2 in this theater. Establishing the proper C2 would enhance the greatest fluidity of operations in a joint environment.

Players noted that joint pre-deployment training cycles would create continuity of training and operations in regards to efficiency and timing. The players proposed that Navy and Marine Corps units should indeed train together in the workup cycles so that they are able to train and deploy together to establish the best working relationships upon deployment into theater.

Standardization was a common theme among the players. However, there was uncertainty in its definition. It was assumed that standardization should be applied to a fluency of terms, equipment usage, and cultural barriers. By establishing consistency in how the Navy and Marine Corps conduct joint operations, it will ensure that both have an understanding of maritime operations and establish the greatest concept of operations (CONOPS) by which to accomplish the mission.

Question #3: Given the alternative FDC and its corresponding naval force integration, can these capabilities be integrated sufficiently to accomplish mission in steady state and during crisis response? Why or why not?

Yes. As displayed in the charts in figures 4.19 through 4.22, the majority of the players concluded that the alternative FDCs were geared towards steady state, and were capable of accomplishing the variety of missions required--both throughout the spectrum of steady state operations and during non-MCO crisis response.

Players also emphasized that significant changes in service level doctrine, training, and pre-deployment exercises would be necessary to effectively utilize the capabilities of the alternative FDCs when applied to major combat operations. Several players voiced concerns that the dispersal of capabilities would prove problematic in MCO because such activities would inhibit the speed of response and aggregation in order to accomplish the mission. However, when briefed to the distinguished visitors (DVs) at the outbrief, these senior leaders responded that this risk is mitigated by the fact that MCOs have a longer build time due to indications and warning (I&W).

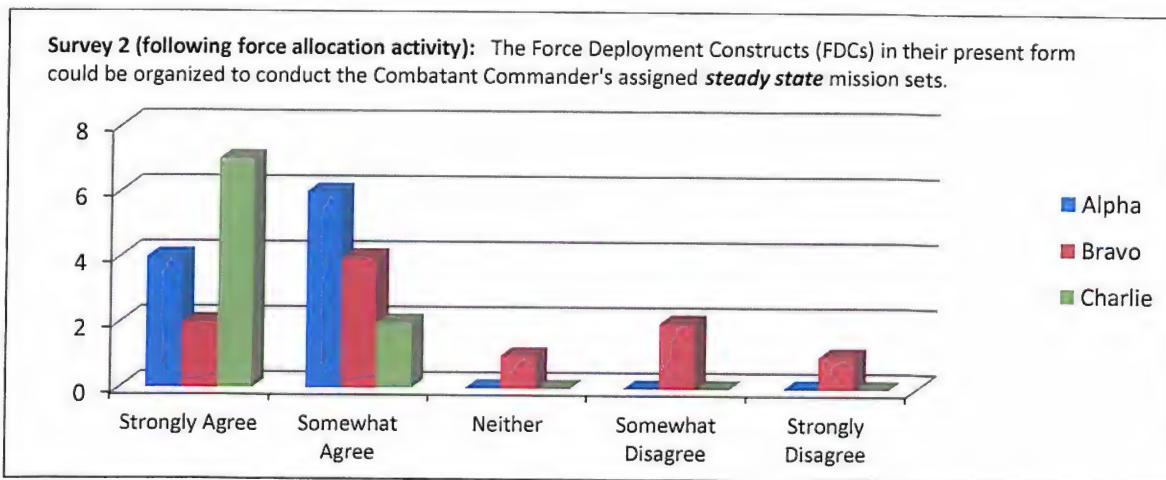


Figure 4.19 – Player Responses: FDC Ability to Conduct Operations in Steady State

Survey 2 (following force allocation activity): The FDCs in their present form could be organized to conduct *crisis response* operations.

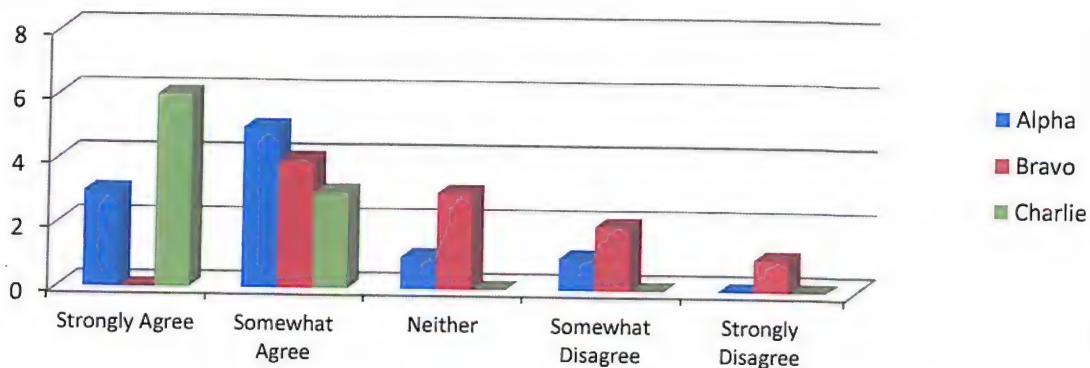


Figure 4.20 – Player Responses: FDC Ability to Conduct Operations in Crisis Response

SURVEY 3 (following crisis response activity): The Force Deployment Constructs (FDCs) in their present form could be organized to conduct the Combatant Commander's assigned *steady state* mission sets.

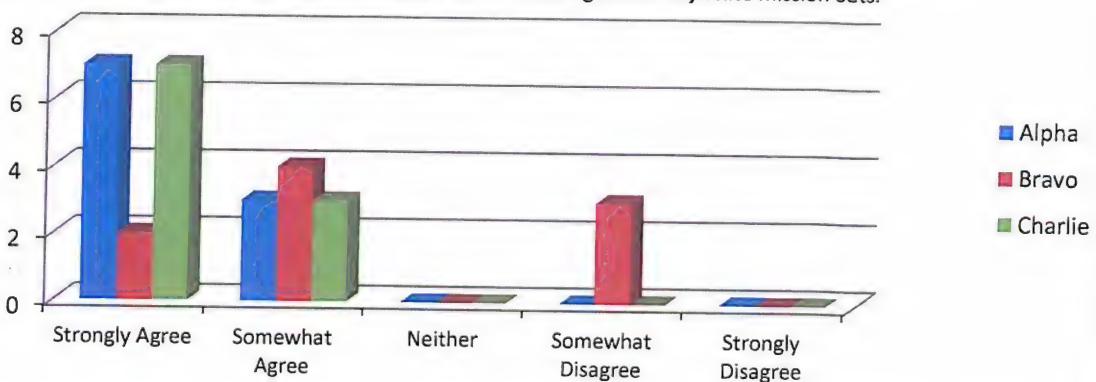


Figure 4.21 – Player Responses: FDC Ability to Conduct Operations in Steady State

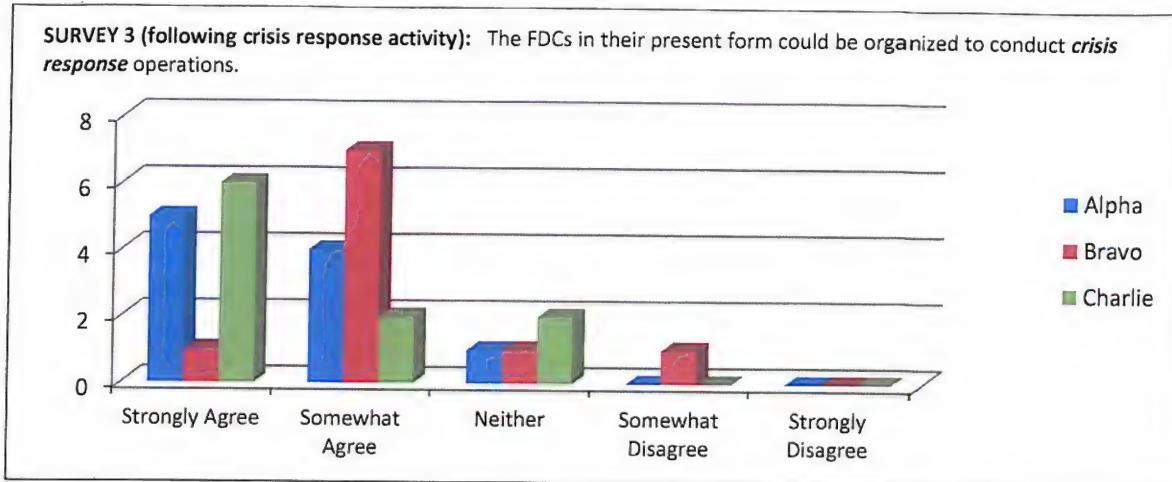


Figure 4.22 – Player Responses: FDC Ability to Conduct Operations in Crisis Response

Question #4: *In regards to naval force integration, what operational challenges are present in force re-aggregation, and how can they be overcome?*

The players concluded that the primary challenge inherent in the alternative FDCs was that significant aggregation would be required in order to respond in MCO. As noted in question two, the players identified Command and Control (C2) as one of the primary challenges in re-aggregating dispersed naval forces. They suggested that a clear delineation of command relationships would mitigate the inherent C2 issues involved in aggregating previously dispersed Navy and Marine forces. Additionally, they proposed that integrated staffs should become the norm, with Marine officers routinely assigned to Navy staffs and vice versa, in order to provide cross-service insight and minimize confusion and culture conflicts when aggregation is required in response to a crisis.

Participants also emphasized that current doctrine and training procedures did not sufficiently address the challenges of force aggregation in response to MCO. They suggested that aggregation should become a core competency, and that the training cycle for each FDC should be modified to include exercises involving force aggregation built up to a level required for major combat operations. Additionally, they noted that the current crisis response OPLANs assume a greater level of steady state aggregation than that which would be present if the alternative FDCs were implemented. Lastly, players recommended that the OPLANs should be rewritten to account for the steady state dispersal of forces and the time required to re-aggregate in response to a major crisis.

Question #5: *How do the naval services efficiently implement, employ, and maintain the alternative FDC in order to accomplish the mission?*

Implementation: The cells maintained that the dispersed laydown of FDC's throughout the theater afforded the widest range of mission capabilities. This construct spread out capabilities

throughout the AOR for initial crisis response. However, while this setup provided the AOR with these capabilities in Phases 0 and 1, it did not present a more efficient or capable laydown when the intensity of conflict levels increased.

Employment: Each cell determined a great need for a wide range of FDC capabilities. However, they also implied that there are challenges in the correct allocation and placement of these forces. Moreover, changes could occur at a moment's notice, depending on the state of affairs in the AOR. The diversity of the FDC's provided the best capabilities over a wider area.

One additional concern noted on the subject of employment was lift capacity. This capability was not uniform throughout each FDC, and required sharing assets throughout the theater. This sharing limited FDC employment by giving up other assets in support of other FDCs.

Maintenance: The cells unanimously agreed that a force dispersed throughout the theater provides greater ability to carry out multiple mission sets over a wider operational area. However, this dispersal came at a cost to performance. While capabilities of theater assets were spread out and operated in a steady state environment, they were not able to maintain high levels of performance during MCO or for an extended period of time.

Lastly, the cells noted that the dispersal of forces presents substantial logistics challenges. As forces are spread out through the theater, sustainment (supplies, fuel, maintenance, etc.) became increasingly more difficult over a broader area. It was necessary to bring more supply assets (sea/land-based) into theater, so that deployed forces could maintain operational readiness.

F. Limitations of Data Analysis

One of the greatest challenges for military research institutions, including the Naval War College's War Gaming Department and the Marine Corps Warfighting Laboratory, is to develop a game that provides the robust insights into an issue or problem sought by the game's sponsor. Accordingly, managing stakeholder expectations about what a final game report will tell them with respect to broad-based themes and implications is essential. Stakeholders often seek findings that will provide them with predictive conclusions for decision-making purposes. However, gaming is a predominantly descriptive process because games are not experiments. Even if a war game is repeated, it lacks sufficient controls over player inputs and the central limit theorem for a distribution (i.e., unknown shape of the distribution) to ensure validity. In other words, sponsors should not attempt to draw inferences beyond what a specific group of players did in a particular game to yield generalizability (the ability to apply the findings observed for a small population to the broader world around us). NSG 13 is no exception to this premise.

This game was designed to be highly inductive in order to garner broad-based themes relevant to the overarching research questions. The value gained from this inductive approach were drawn from the players' own experiences and words, which culminated in the three thematic areas identified in this game—Flexibility of Capabilities, Aggregation of Forces and Training towards

Integration. Applying this inductive, theme-based approach sets the conditions that can be tested in future deductive games and experiments.

The effectiveness of analysis can be measured in terms of inherent structural validity, or, in the case of NSG 13, internal validity. Internal validity refers to the extent that cause-and-effect relationships identified in the game can be inferred from the data collected. A number of potential threats to internal validity need to be accounted for and analytic efforts must attempt to minimize the effect of these threats.

Two threats to internal validity were the quality of data collected and the accuracy of the analytic techniques used to review these data. As noted in Appendix "F" of this report, to ensure quality data collection, the Data Collection and Analysis Team (DCAT) relied heavily on individual player surveys, cell-derived templates, and plenary briefs. Insights extracted from these data sources were subsequently cross-checked or triangulated with other data sets including ethnographers' notes from the plenary sessions and the flag outbrief to ensure accuracy and conclusiveness. Multiple analytic methods and tools were also employed to review these same data. These methods included content analysis, grounded theory, and data visualization.

Although internal validity threat mitigation strategies were used, the greatest limitation to developing themes from the data resulted from the diverse backgrounds of participants. Despite their expertise, different lexicons and perspectives of the same situation added a level of difficulty to data interpretation.

V. CONCLUSIONS AND FINDINGS FOR FURTHER STUDY

NSG 13 identified three major themes that permeated game play and impacted player decision-making on the construction of FDCs. These themes were Flexibility of Capabilities, Aggregation of Forces, and Training toward Integration. Players considered a myriad of non-traditional approaches to effectuate these themes in the construction and implementation of alternative FDCs. The players found the non-traditional FDCs especially useful in the steady state and crisis response operations at the lower end of the ROMO. The effectiveness of the alternative FDCs during MCO was not considered as the players generally assumed that there would be a drive to re-establish traditional forces constructs to support MCO.

All three cells worked to achieve greater balance across the force with respect to flexibility, aggregation, and training and the establishment of FDCr at the outset of the game provided a baseline for solution requirements. One approach to achieving the desired balance of capabilities across the force utilized a non-traditional blend of amphibious force capabilities with standoff strike capabilities. Some cells chose to assign an expeditionary raid force within an aviation centric strike force, while other cells developed amphibious centric force with greater strike capability. Each method identified different strengths and limitations. Cells also found utility in integrating and operationalizing traditional MPSRON shipping within FDCs. Each cell utilized integrated MPSRON shipping in a slightly different way to support or increase the capability of an FDC.

While players found utility in the alternative FDCs, gameplay highlighted many potential issues that would need to be rectified to achieve full effectiveness of the alternative FDC. The game accentuated that employing these alternative FDCs creates considerable training challenges for the naval services. Training concerns were underscored throughout the game and were emphasized during discussions regarding force aggregation and command and control. C2 friction points were prevalent during the steady state and during transition to crisis response including major combat operations. Continuous training and standardization, especially during pre-deployment periods will help mitigate potential issues.

Continued exploration of the three themes identified during NSG and possible experimentation based on NSG findings will leave military decision-makers better poised to deploy the naval force in a manner that best meets the requirements of the Combatant Commanders in performing both steady state and crisis response missions. It is expected that the Naval Warfare Group consisting of the Marine Corps' Ellis Group and the Navy Warfare Group, will examine this report and its findings in order to make recommendations to the Naval Board for items worthy of experimentation and testing.

VI. APPENDICES & SUPPLEMENTAL DATA

Appendix A – Scenario

THIS APPENDIX CLASSIFIED

Appendix B – Final Outbriefs



Naval Services Game 2013
Cell A Outbrief

27-31 January 2014

War Gaming Department, NWC
Wargaming Division, MCWL

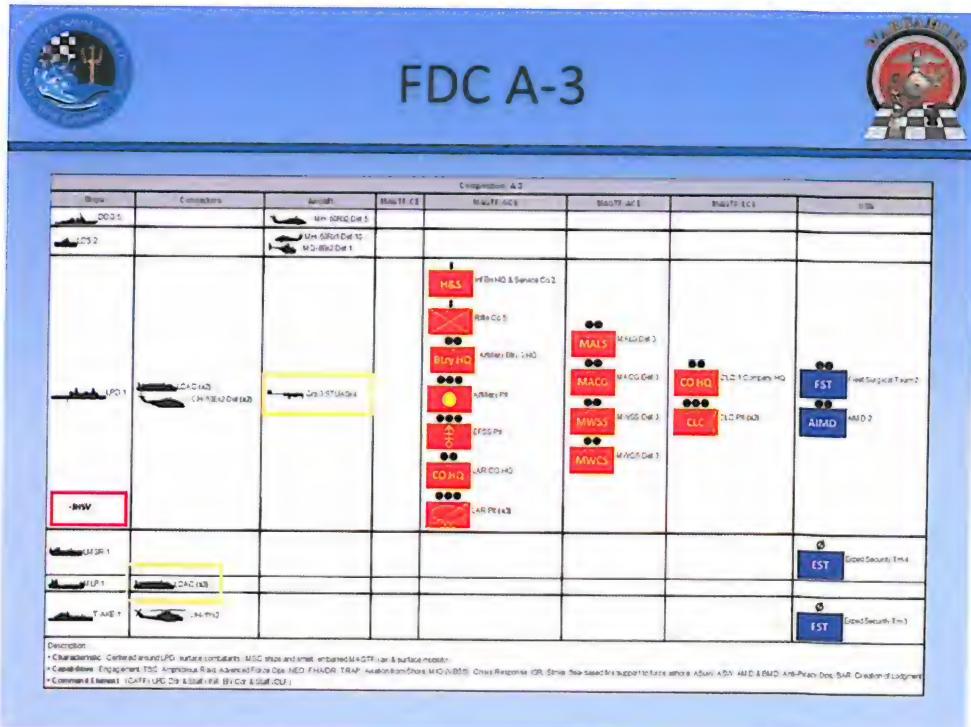
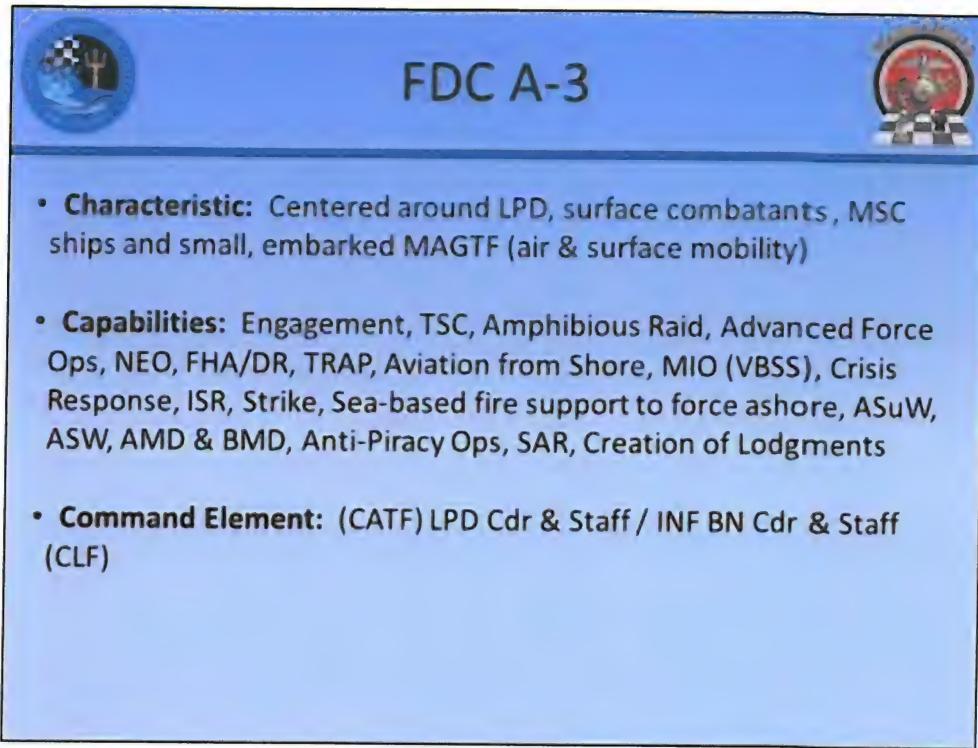
FDC A-1

- Characteristic:** Centered around a CVN with small, embarked SPMAGTF (air mobility)
- Capabilities:** MCO, Strike, ASuW, ASW, AMD & BMD, MDA, Sea-based fire support to force ashore, SOF support, TRAP, MIO(VBSS), Crisis Response, Engagement, TSC, Amphibious Raid, FHA/DR, Anti-Piracy Ops
- Command Element:** CSG Cdr and Staff / USMC O-4 Cdr and Staff
- NOTE:** Reduced Aviation Strike Capability.

Cell's Most Interesting FDCs
FDC A-1

| Composition A-1 | | | | | | | |
|-----------------|--|--|-----------|--|-----------|---|---------------------|
| Ship | Connectors | Aircraft | MAGTF CCE | MAGTF ACE | MAGTF ACE | MAGTF LCE | USN |
| DDG 1 | | MH-60R2 Dif 3 | | | | | |
| DDG 2 | | MH-60R2 Dif 4 | | | | | |
| C/N 1 | C 24 (x2) MH-60S2 Dif 1(x2) UH-60D Dif 1(x4) | F-35C2 Dif (x12) F/A-18F2 Dif (x5) F/A-18F2 Dif (x9) E-3D(x2) F/A-18G5 MH-60R2 Dif (x2) | EF | Rifle Co HQ Sqd 1 Rifle Plt (x3) Signs Plt 1 | CLC Plt 3 | CSG Staff CVW Staff DESRON Staff EOC MOB Dif 2 | |
| CG 1 | MH-60S2 Dif 3 | | | | | | |
| SSN 1 | | | | | | | |
| TAO 1 | JHSV (removed) | | | | | EST | Exped Security Tm 1 |

Description:
 - Characteristic: Centered around a CVN with small, embarked SPMAGTF (air mobility)
 - Capabilities: MCO, Strike, ASuW, ASW, AMD & BMD, MDA, Sea-based fire support to force ashore, SOF support, TRAP, MIO(VBSS), Crisis Response, Engagement, TSC, Amphibious Raid, FHA/DR, Anti-Piracy Ops
 - Command Element: CSG Cdr and Staff / USMC O-4 Cdr and Staff





FDC A-4



- **Characteristic:** Land based, Special Purpose MAGTF (air and surface mobility)
- **Capabilities:** Engagement, TSC, FHA/DR, Crisis Response, Aviation from Shore, small scale Raid, Advanced Force Ops, Stability Ops
- **Command Element:** INF BN Cdr & Staff / MAG
- **Note:** Reduced raid capability due to V-22s being moved onto CVN.

FDC A-4 in Detail

| Organization Chart | | | | | | | |
|--------------------|----------------|--------------|------------|--------------------|----------------|------------|-----------|
| Shape | Communication | Availability | Management | Planning & Control | Material Stock | Production | Logistics |
| | | | | | | | |
| | HC-130H 1 | | | | | | |
| | HC-130J 2 | | | | | | |
| | F-35B 3 | | | | | | |
| | F-35C 4 | | | | | | |
| | F-35B 5 | | | | | | |
| | UH-60 6 | | | | | | |
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Summary of Remaining FDCs

- FDC 2 (centered around LHD) was most utilized but needed some limited changes.
- FDC 8 (BMD combatants) requires consideration of relieve on station.
- FDC 9 and 10 (CORIVRON) constrained by mobility.
 - Requires additional lift/logistics
- FDC 5 thru 7 satisfied COCOM requirements
 - TSC
 - Deterrence
 - ASW

Force Design Criteria

| <u>Tiger Team</u> | <u>Delta from Cell A</u> |
|----------------------|--------------------------|
| Integration | Disaggregated |
| Interoperability | |
| Adaptable/Flexible | |
| Standardized | |
| Scalable/Capable | |
| Aggregated/Composite | |

Force Allocation

- How well did alternative FDCs address steady state events?
 - Satisfied all COCOM requirements
 - FDC A-1, A-6, and A-11 fulfilled presence and deterrence requirements.
 - FDC A-1 provided surge capability
- Identify issues: gaps or excess capacities?
 - Gaps
 - FDC A-9/10 requires lift assets
 - FDC 8 needed greater depth to maintain station
 - LCS module swap out impacted operational use
 - Excess capacities
 - None. Seemingly underutilized forces would be conducting day to day operations ISO COCOM requirements not accounted for on game scorecard. These include deterrence, presence, and ISR

Crisis Response

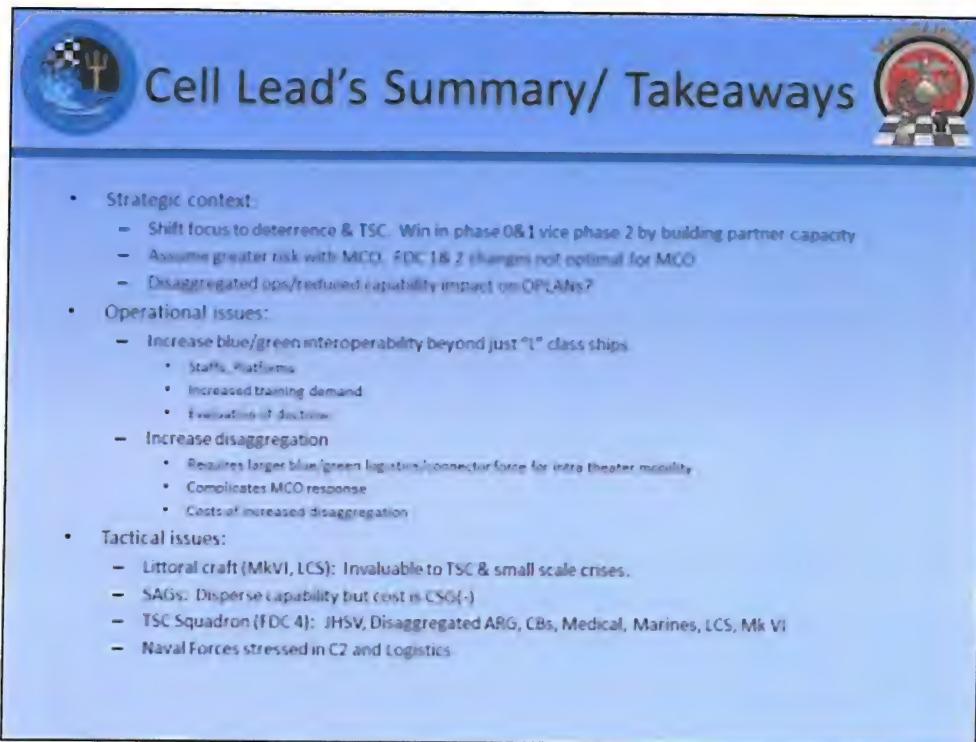
- Inject 1:
 - Multiple suitable FDCs
 - Selection based upon Time/Distance vice optimal FDC
- Inject 2:
 - Combined FDC 1 & 3 to provide capability
 - Selection based upon Time/Distance vice optimal FDC
- Inject 3:
 - Required all available FDCs to provide MCO
 - FDCs impact OPLAN design

Employ, Implement, and Maintain Implications and Challenges

- In examining your theater set of FDCs, what capabilities/assets are in high demand or redundant?
 - High Demand: Expeditionary forces, Connectors/Lift, Medical/dental for Steady State
 - FDCs 1&2 were high demand for crisis response
- What is the flexibility of your theater set of FDCs to aggregate into larger force? Are there particular alternative FDCs that complicate force aggregation
 - C2 challenges
 - Some FDCs require greater lift capacity
- Overall, what operational capabilities are lost/gained by replacing current FDCs?
 - Reduced STRIKE capacity on CVN... but MV-22 & Marines increase flexibility
 - FDC A-4 became a heavy QRF....but limited in aerial delivery
 - Discussed designing a TSC-centric Squadron

Employ, Implement, and Maintain Implications and Challenges (2)

- For key alternative FDCs, what are challenges /implications for the Naval Services to man, train, equip, and integrate the force?
 - New FDCs requires revisions to doctrine and training
 - Greater disaggregation of the FDCs increase demand on maintenance and training Challenges to preparation for MCO/crisis
 - Greater disaggregation challenges logistics sustainment
- For key alternative FDCs, what challenges are associated with maintaining rotational cycles over time? For reconstituting capabilities?
 - Force wide resources challenge
 - Certification challenges
 - Greater BMD capacity required



Cell Lead's Summary/ Takeaways

- Strategic context:
 - Shift focus to deterrence & TSC. Win in phase 0&1 vice phase 2 by building partner capacity
 - Assume greater risk with MCO. FDC 1B 2 (hangin) not optimal for MCO
 - Disaggregated ops/reduced capability impact on OPPLANs?
- Operational issues:
 - Increase blue/green interoperability beyond just "1" class ships.
 - Staffs, Platforms
 - Increased training demand
 - Evolution of doctrine
 - Increase disaggregation
 - Requires larger blue/green logistics/connector force for intra theater mobility
 - Complicates MCO response
 - Costs of increased disaggregation
- Tactical issues:
 - Littoral craft (MkVI, LCS): Invaluable to TSC & small scale crises.
 - SAGs: Disperse capability but cost is CSO(-)
 - TSC Squadron (FDC 4): JHSV, Disaggregated ARG, CBs, Medical, Marines, LCS, Mk VI
 - Naval Forces stressed in C2 and Logistics



 Naval Services Game 2013

Cell B Outbrief

27-31 January 2014

War Gaming Department, NWC
Wargaming Division, MCWL

FDC B-1

Description

- Provides a USMC ground element with a modified CSG

Takeaways

- Lacks air/surface connectors
- Mitigation Option: Embark assault support (MV-22/CH-53) aboard CVN
 - Complexity of the problem beyond scope of analysis for this game
- Group Decision: Tether/lily pad MV-22 to provide lift for USMC combat element

PROVIDES READY EMPLOYMENT OPTION FOR EMBARDED USMC FORCES

Original Tiger Team Capabilities

MCO, Strike, SUW, ASW, AMD & BMD, MDA, Sea-based Fire Support to Force Ashore, SOF Support, TRAP ?, MIO(VBSS), Crisis Response, Engagement, TSC, Amphibious Raid ?, FHA/DR, Anti-Piracy Ops

Cell's Most Interesting FDCs

B-1

| BRIG | Connectors | Aircraft | BRIG TS (x6) | MAINT (x6) | READY (x6) | READY (x6) | UIN |
|--------|------------------------------------|---|--|-----------------|------------|------------|--|
| DDG 1 | | | | ••• Rate P13 | | | |
| CVN 1 | → C-14 (x2) MH-60R(x2) Det (x2) | ♦ P-300A2 Det (x12) ♦ P-Air SEAD Det (x6) ♦ P-Air BMD Det (x6) ♦ V-22(x3) Det ♦ F/A-18E ♦ MH-60R2 Det (x2) | | | | | CNO Staff CNO Staff DEIRON Staff ••• 100 MOD |
| CG 1 | | UH-60R Det 2 | ••• Rate P12 | | | | CGO Staff CVW Staff DEIRON Staff 100 MOD CNO |
| TAKE 1 | → MH-60R(x2) Det 4 | | •• Rate Co HQ Det 1 ••• Rate P11 ••• WING | | | | EST Eased Security Tim 3 •• CB Det EST Eased Security Tim 1 |
| TAD 1 | | | | | | | |

 **FDC B-23** 

Description

- Provides sea-basing enabling capability

Takeaways

- Can provide logistics sustainment to dispersed naval forces
- Re-examine assumptions about force laydown options
- Can conduct stand-alone steady-state TSC events and limited crisis response
- Operationalizing pre-positioning assets
 - Requires external air/surface connectors
 - Limited husbanding

PROVIDES EQUIPMENT / SUSTAINMENT FOR ASSEMBLAGE OF NAVAL FORCES

Original Tiger Team Capabilities

- N/A (New FDC)

 **Cell's Most Interesting FDCs** 
B-23

Composition: B-23

| Ships | Connectors | Aircraft | MAGTF-CE | MAGTF-GCE | MAGTF-ACE | MAGTF-LCE | USN |
|---------|------------|----------|----------|-----------|-----------|-----------|-----|
| LMSR 1 | | | | | | | |
| MLP 1 | | | | | | | |
| T-AKE 4 | | | | | | | |
| | LCAC 4 | | | | | | |
| | LCAC 5 | | | | | | |
| | LCAC 6 | | | | | | |
| | LCAC 7 | | | | | | |

FDC B-2

Description

- Amphibious task force centered around LHD with embarked Landing Teams

Takeaways

- Reorganized aviation assets to include F-35B (5th Gen Strike capability)
- Recommend adding LCS (and surface combatant) for enhanced Blue/Green mission capabilities

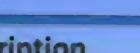
MOST VERSATILE/CAPABLE AMPHIBIOUS PACKAGE IN BRAVO FDC

Original Tiger Team Capabilities

Engagement, TSC, Amphibious Raid, MIO(VBSS), Advanced Force Ops, NEO, FHA/DR, Stability Ops, TRAP, Aviation from Shore, Airfield/Port Seizure, Aviation Ops, ISR, MDA, Anti-Piracy Ops, SAR, Creation of Lodgments, **with Strike Capabilities.**

Cell's Most Interesting FDCs
B-2

| Block | Components | Assets | Mobile | Battalions | Marine Co | Marine LCs | Units | |
|---------|--|--|--------|------------|---|--|---|---|
| LHD 1 | | MEU(Batt) Det 1 HQ MEU Det 1 | | | 3rd Bn HQ & Service Co 1 Batt Co (42) Recon Co 1 LAR Plt 2 LAR Eng Plt 2 Hand 1st Eng Plt (MCB 1) | LAND Det 1 MCB 1 MCB 2 Det 1 MCB 3 Det 1 MCB 4 Det 1 | LAND Det 1 MCB 1 Company HQ MCB 2 Det 1 MCB 3 Det 1 MCB 4 Det 1 | PHIBRON Staff TACRON Staff FST AMU BMU EOD MCB 1 MCB 2 Det 1 MCB 3 Det 1 MCB 4 Det 1 MCB 5 Det 1 MCB 6 Det 1 MCB 7 Det 1 MCB 8 Det 1 |
| LHD 2 | 200C x 30 Marine Det (2) LAR Det MP 2202 Det (2) MCB 1 (MCB 1) | 200L Det (2) AV 102 Det (2) AV 102 Det (2) | | | | | | |
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FDC B-6



Description

- Multipurpose, littoral, subsurface combatants and significant strike capability with embarked Landing Team (air & surface mobility)

Takeaways

- Innovative combination of platforms and units (SSGN, LCS and ISR)
- May be further leveraged by including Riverine forces within the T-AKE
- Could be a critical enabler when combined with other FDCs
- Provides clandestine insertion (SSGN) but lacks reinforcement capability
- Provides persistent ISR capability, rotary wing attack and light utility assault support

SERVES AS AN AMPHIBIOUS TASK FORCE WITHOUT ANY TRADITIONAL AMPHIBIOUS ASSETS

Original Tiger Team Capabilities

Strike, ASuW, Engagement, TSC, Amphibious Raid, Advanced Force Ops, ISR, MIO (VBSS), Crisis Response, TRAP, Aviation from Shore,

Summary of Remaining FDCs

- FDCs B1 thru B-6 are L-deck/CVN focused;
- FDCs B-7 thru B-10 are individual DDG/SSN;
- Remaining FDCs are general support enabling capabilities
- FDC laydown created challenges
 - Surface/Air Lift/Connectors
 - Distribution of logistics resources
 - Maintenance/Sustainment
 - Pre-deployment training challenges
 - C2 relationships

Force Design Criteria

Key force design criteria for forming alternative FDCs?

| <u>Tiger Team</u> | <u>Bravo Cell</u> |
|---|---|
| <ul style="list-style-type: none"> • Integration • Interoperability • Adaptable/Flexible • Standardized • Scalable/Capable • Aggregated/Composite | <ul style="list-style-type: none"> • Integration* • Interoperability* • Adaptable/Flexible • Standardized • Scalable/Capable • Aggregated/Composite • Sustainable • Affordability |

Red font denotes changes from Tiger Team

*Integration and interoperability across Joint and Coalition

Force Allocation

How well did alternative FDCs address steady state events?

- Task Organization: FDCs were broken up into small packages, Yet – we had to pull some assets from other FDCs to fill gaps
- Assignment to shipping: Must look at how we distribute forces and capabilities across the FDCs, current allocation is sub-optimized
- USMC/USN Integration: Explore concept of distributing small Marine dets aboard non L-deck platforms
- FDCs may/should have greater flexibility due to their ability to leverage tilt-rotor technology and expanded operational range
- The utility of creating FDCs that employ T-AKE, LMSR, MLP to support steady-state theater engagement operations

Force Allocation

- Identify issues: gaps or excess capacities?
 - Gaps
 - » Connectors: MLP can only interface with LCAC and LMSR
 - » Forward-deployed 3MEF units missing from FY-17 force allocation
 - » Medical support lacking (esp. dental), could have been partially mitigated by MLG forces not in force allocation
 - » Additional intra-theater lift required to support enduring sustainment requirements
 - » Lift lacking to support MK-VI patrol boats
 - Excess Capacities
 - » None identified at this time

Crisis Response

- **Crisis 1**
 - Theater engagement impacted for up to 60 days
 - When distributed, force's ability to rapidly respond improved, capability may not be optimized
 - Response adequate to address crisis, JHSV and LCS instrumental and well-positioned
 - Using cargo airlift (C-40s, C-130s, C-2s) in crisis response potentially impacts theater sustainment
- **Crisis 2**
 - Aggregation of forward-presence forces provided innovative FDC solution to crisis
 - Employing kinetic response with insufficient ISR and without coordination from host nation is problematic, increases risk of collateral damage
- **Crisis 3**
 - Although crisis required significant refocus of assets, most FDCs involved weren't significantly engaged at the time
 - Extended employment in crisis response would lead to significant follow-on/steady state ops
 - Individual FDCs unable to provide sustained support, aggregation of forces required
 - FDC relationships will change upon aggregation of forces for potential MCO
 - Navy ability to provide immediate sea control and air superiority was critical, fortunate that B-1 was readily available; USMC 5th GEN provided additive capability

Employ, Implement, and Maintain Implications and Challenges

Employ:

- Dispersed FDCs provide rapid response, may not possess optimal capability
- Pre-deployment training (USN/USMC) must account for aggregated and disaggregated operations, however dispersed FDCs may not provide sufficient opportunities for large-scale integrated training

Implement:

- Fundamental tension exists between requirement for steady state disaggregation/dispersion and capacity for crisis response
- Increased flexibility/responsiveness at expense of high-end capability
 - In steady state: increased flexibility
 - In crisis: accelerated speed of initial response, however ability to respond with tailored force may take more time

Employ, Implement, and Maintain Implications and Challenges

Maintain:

- Equipping requires a reexamination of resource distribution across multiple platforms; may have resource implications
- Integrating multiple FDCs creates challenges

Challenges:

- Sustainment and training challenges in maintaining distributed FDCs
 - Aviation
 - Logistics CTF
- May require increased host nation support, pier maintenance, and spaces ashore for embarked assets
- Aligning personnel rotation, particularly for high-demand/low-density skill sets

Cell Lead's Summary/ Takeaways

- FDCs provide useful means for examining concepts for expeditionary (USN/USMC) operations on non-traditional platforms
- Although FDCs are capable of addressing a multitude of steady-state requirements, there are challenges in regarding aggregation and operations of the complex high-end environment
- Need for increased theater logistics requirements (reach-back and distribution)
- FDCs have Service-level impacts for how we organize, train, equip for future force employment
- C2 Relationships



Naval Services Game 2013

Cell C Outbrief

27-31 January 2014

War Gaming Department, NWC

Wargaming Division, MCWL

- **Characteristic:** Centered around a CVN, includes a LPD, surface combatants, **SSN**, and a small embarked MAGTF (air and surface mobility)
- **Capabilities:** MCO, Strike, ASuW, ASW, AMD & BMD, MDA, Sea-based fire support to force ashore, SOF support, TRAP, MIO(VBSS), Crisis Response, Engagement, TSC, Amphibious Raid, FHA/DR, Anti-Piracy Ops, NEO
- **Command Element:** FDC Large Staff: Augmented CSG staff, consisting of USMC (rank structure equivalent to requirement)

FDC C-2

- **Characteristic:** Centered around LHD and LSD with surface combatants, MSC and an embarked MAGTF (air and surface mobility)
- **Capabilities:** Engagement, TSC, Amphibious Assault, Amphibious Raid, MIO(VBSS), Advanced Force Ops, NEO, FHA/DR, Stability Ops, TRAP, Aviation from Shore, Airfield/Port Seizure, Aviation Ops, ISR, MDA, Strike, Sea-based fire support to force ashore, ASuW, ASW, AMD & **BMD**, Anti-Piracy Ops, SAR, Creation of Lodgments
- **Command Element:** FDC Large Staff: Integrated PHIBRON/MEU staff

Charlie's Most Interesting FDCs
FDC C-2

| Column 1 | Column 2 | Column 3 | Column 4 | Column 5 | Column 6 | Column 7 |
|----------|----------|----------|------------|------------|------------|-------------|
| LHD | LSD | MSC | Red Box 1 | Red Box 2 | Red Box 3 | Blue Box 1 |
| | | | Red Box 4 | Red Box 5 | Red Box 6 | Blue Box 2 |
| | | | Red Box 7 | Red Box 8 | Red Box 9 | Blue Box 3 |
| | | | Red Box 10 | Red Box 11 | Red Box 12 | Blue Box 4 |
| | | | Red Box 13 | Red Box 14 | Red Box 15 | Blue Box 5 |
| | | | Red Box 16 | Red Box 17 | Red Box 18 | Blue Box 6 |
| | | | Red Box 19 | Red Box 20 | Red Box 21 | Blue Box 7 |
| | | | Red Box 22 | Red Box 23 | Red Box 24 | Blue Box 8 |
| | | | Red Box 25 | Red Box 26 | Red Box 27 | Blue Box 9 |
| | | | Red Box 28 | Red Box 29 | Red Box 30 | Blue Box 10 |

- **Characteristic:** Centered around LSD, littoral and surface combatants, JHSV and embarked landing force (surface mobility)
- **Capabilities:** Engagement, TSC, Amphibious Raid, MIO(VBSS), NEO (Surface only), FHA/DR, TRAP(Surface only), Airfield / Port Seizure, Crisis Response, Strike, ASuW, MDA, ISR, Anti-Piracy Ops, SAR, Maritime Patrol, Natural Resources Protection, Maritime Expeditionary Security Ops
- **Command Element:** FDC Medium Staff: Integrated FDC staff

Charlie's Most Interesting FDCs

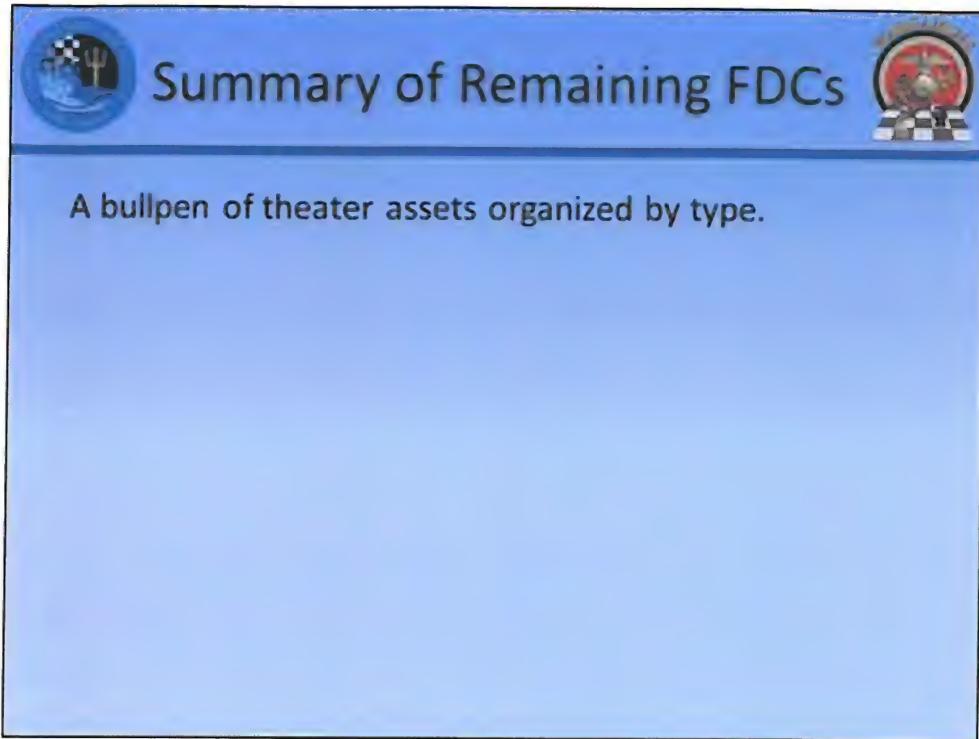
FDC C-3

FDC C-4

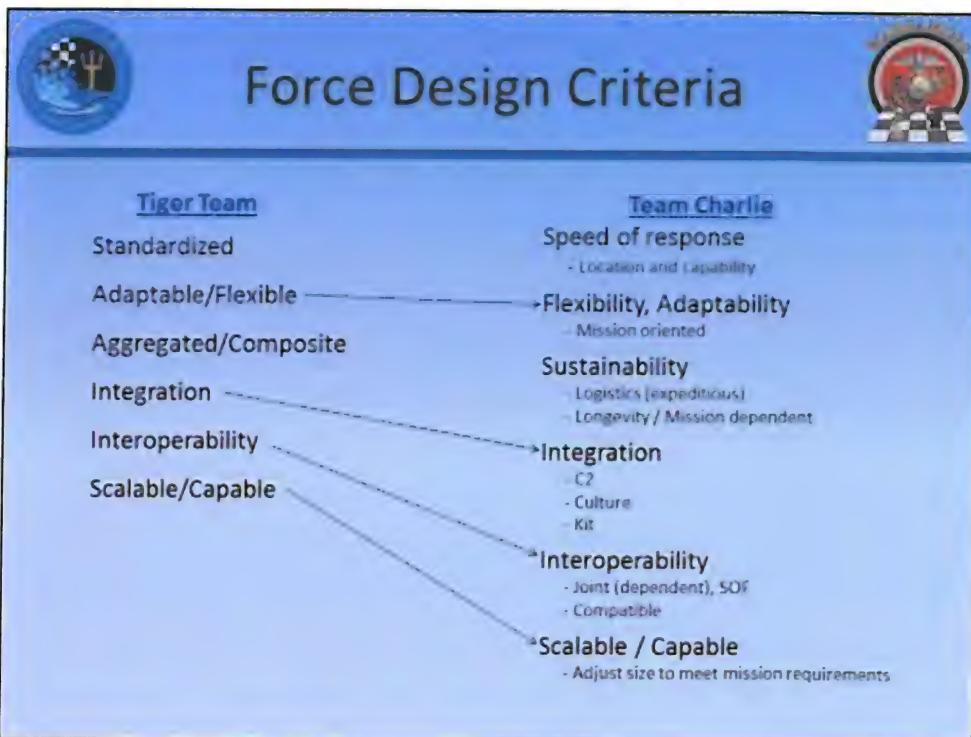
- Characteristic:** Sea based, Special Purpose MAGTF - TSC embarked on MSC ships with surface combatant (air mobility)
- Capabilities:** Strike, ASuW, Engagement, TSC, Amphibious Raid, MIO(VBSS), NEO, FHA/DR, TRAP, Airfield/Port Seizure, Crisis Response, Stability Ops
- Command Element:** FDC Small Staff: Integrated DESRON/O-4 Staff

Charlie's Most Interesting FDCs
FDC C-4

| Ship | Classification | Role | Ship ID | Desron | Role | Ship ID | Desron | Role |
|---------|--------------------|------|---------|------------|------|---------|--------|------|
| USS C-4 | Multirole C-4 Det. | | | AAA Pt 0 | | | | |
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| | | | | ASW Pt 218 | | | | |
| | | | | ASW Pt 219 | | | | |
| | | | | ASW Pt 220 | | | | |
| | | | | ASW Pt 221 | | | | |
| | | | | ASW Pt 222 | | | | |
| | | | | ASW Pt 223 | | | | |
| | | | | ASW Pt 224 | | | | |
| | | | | ASW Pt 225 | | | | |
| | | | | ASW Pt 226 | | | | |



A bullpen of theater assets organized by type.



Force Allocation

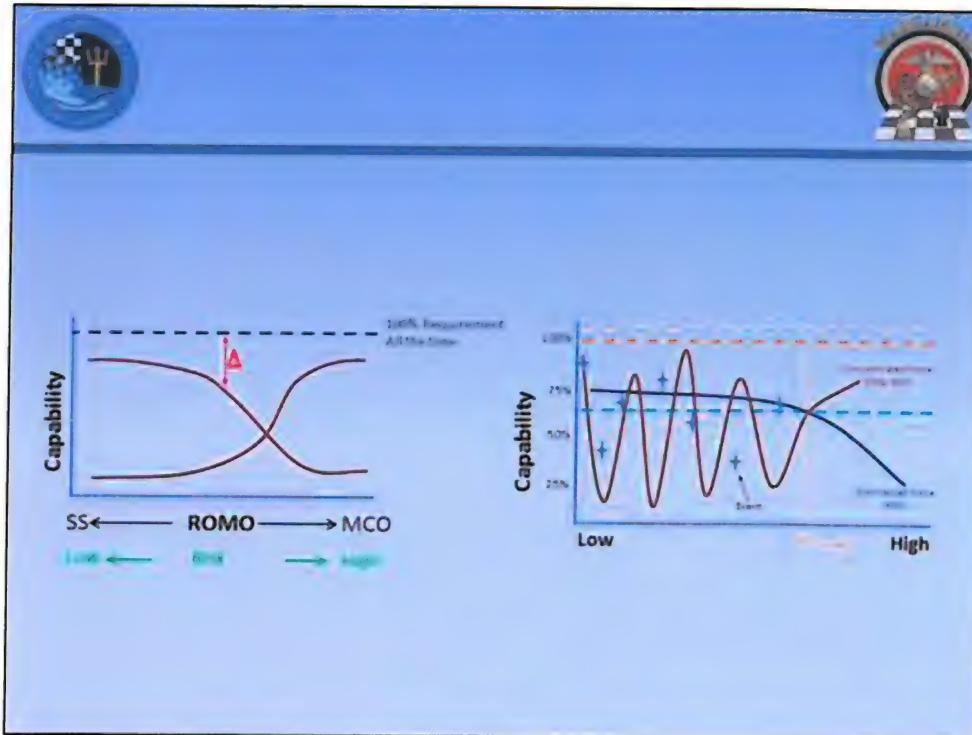
How well did alternative FDCs address steady state events?

As constructed, the FDC's were able to meet all of the steady state OPS but should be balanced in order to be optimized.

Each FDC can be reorganized to meet other global force management requirements.

Identify issues: gaps or excess capacities?

- Lack of a coherent integrated C2 structure, both internal to the FDC's and to support aggregation.
- Use of alternative platforms (JHSV, LCS, LMSR, T-AKE, MLP) requires further analysis and experimentation.
- Establish the relationship between afloat and shore based forces (surface vs assault lift).
- Theater lift was necessary to compensate for the lack of self deployability with some FDC's.



Crisis Response

| Criteria | Pros | Cons |
|--|--|---|
| <ul style="list-style-type: none"> Speed of response Flexibility / Adaptability Sustainability Integration Interoperability Scalable / Capable | <ul style="list-style-type: none"> Forward Presence Rapid Response Flexible Response Low → Med Crisis Response | <ul style="list-style-type: none"> Diluted capability in any FDC Lack of Unity of Command / Coherent C2 structure Aggregation becomes a core competency Some FDC's are comm limited Not organized for Hi-Level fight |

In order to create a general purpose force that is better able to address steady state and crisis response end of the ROMO, each FDC must have a better balance of capabilities (Air, GND, STK, Lift).

Employ, Implement, and Maintain Implications and Challenges

With an increasing subdivision of capability comes an increase overhead in manpower and equipment.

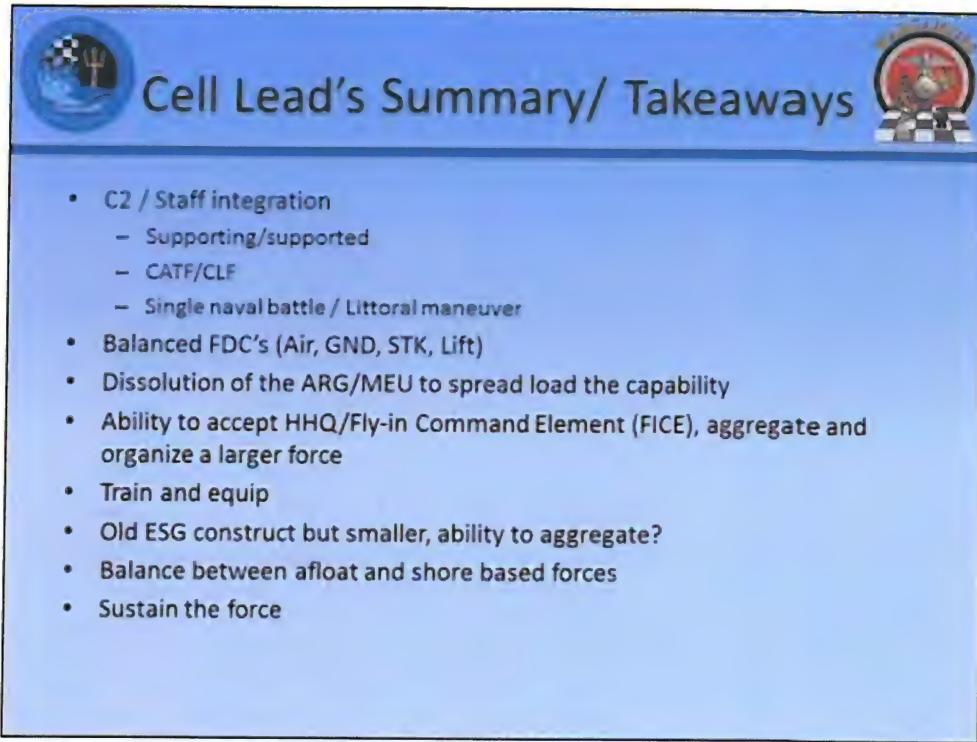
Need to explore the applicability of the current FRTP/PTP (IDTC) model for training these FDC's.

FDC's require a synchronized deployment model.

Need a training and exercise plan that addresses aggregation requirements.

There is a potential for significant maintenance challenges due to dissimilar platforms and distributed operations.

FDC's require naval logistics integration and not just service-centric capabilities and solutions (sufficient CLF capacity?).



The slide has a blue header bar. On the left is a circular icon with a globe, a checkered pattern, and a stylized trident. On the right is a circular icon featuring a ship and a crest. The main title "Cell Lead's Summary/ Takeaways" is centered in white text. Below the title is a bulleted list of 11 items.

- C2 / Staff integration
 - Supporting/supported
 - CATF/CLF
 - Single naval battle / Littoral maneuver
- Balanced FDC's (Air, GND, STK, Lift)
- Dissolution of the ARG/MEU to spread load the capability
- Ability to accept HHQ/Fly-in Command Element (FICE), aggregate and organize a larger force
- Train and equip
- Old ESG construct but smaller, ability to aggregate?
- Balance between afloat and shore based forces
- Sustain the force

Appendix C – Player Surveys

Player Background Survey

PLAYER NAME: (LAST, FIRST NAME) _____

BRANCH OF SERVICE: _____

PRESENT COMMAND: _____

TITLE or BILLET: _____

PLAYER RANK: _____ PLAYER AGE: _____

WARFARE SPECIALTY (DESIGNATOR/MOS and DESCRIPTION): _____

TOTAL YEARS OF MILITARY AND/OR GOVERNMENT SERVICE: _____ (raw #)

TOTAL YEARS OF EXPERIENCE IN WARFARE SPECIALTY: _____ (raw #)

MALE _____ FEMALE _____

PLAYER GENDER:

HIGHEST EDUCATION LEVEL COMPLETED (CHECK ONE):

High School Associate's Degree Bachelor's Degree
 Technical Certificate Graduate Degree Doctoral Degree
 Other

HIGHEST LEVEL OF JPME COMPLETED (CHECK ONE):

NONE PHASE I PHASE II

WHAT SUBJECT MATTER EXPERTISE WERE YOU ASKED TO BRING TO THIS GAME?

DESCRIBE ANY BILLETS THAT YOU HAVE HELD AT THE COMMANDING OFFICER LEVEL (BATTALION, SHIP OR SQUADRON) OR HIGHER THAT CONTRIBUTE TO YOUR ABILITIES TO SUPPORT THIS GAME:

DID YOU PARTICIPATE IN THE 2012 NAVAL SERVICES GAME? YES: NO:

IF "YES," WHAT WAS YOUR ASSIGNED ROLE IN THE GAME? _____

IN YOUR OPINION, WHAT ARE THE BIGGEST ISSUES FACING THE INTEGRATION AND INTEROPERABILITY OF THE NAVY AND MARINE CORPS?

NAVAL SERVICES GAME 2013 ASSIGNED CELL:

BLUE A BLUE B BLUE C

NSG 13 – Individual Player Activity Survey

INTRODUCTION: The purpose of this survey is to allow players to provide timely and candid feedback regarding the theater set force deployment construct (FDC) and its ability to meet the Combatant Commander's assigned steady state mission sets. This information will be routed to the Data Collection and Analysis Team (DCAT) for analysis as part of the post-game report. Ultimately, player responses will greatly assist the United States Navy and U.S. Marine Corps in their ability to develop forward deployed Naval Forces with integrated capabilities for engagement and crisis response.

| Survey 1: Force Design Criteria Survey | | | | | |
|---|--------------------------------|--|-----------------------------|-----------------------------|---|
| <p>1. Based on your experience, what is/are the most important force design criteria(s) utilized to develop the Force Deployment Constructs (FDCs) for the assigned theater? Why?</p> | | | | | |
| <p>2. Of the FDCs within the theater set which FDC would you consider to be the most useful? Why?</p> | | | | | |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 3. I am comfortable with the assumptions made in regards to the limitations imposed on the baseline FDCs. |
| Survey 2 & 3: Force Allocation and Crisis Inject Survey | | | | | |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 1. The Force Deployment Constructs (FDCs) in their present form could be organized to conduct the Combatant Commander's assigned steady state mission sets. |
| | | | | | 1a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 2. The FDCs in their present form could be properly trained to conduct the Combatant Commander's assigned steady state mission sets. |
| | | | | | 2a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 3. The FDCs in their present form could be equipped to conduct the Combatant Commander's assigned steady state mission sets. |
| | | | | | 3a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 4. The FDCs in their present form are sufficient to meet the Combatant Commander's assigned steady state mission sets. |

| | | | | | |
|--|--------------------------------|--|-----------------------------|-----------------------------|--|
| | | | | | 4a. Please provide additional clarification of your answer in the amplifying comments below, with emphasis on the strengths or weaknesses of the FDCs given the Combatant Commander's assigned steady state mission set. |
| 5. In one or two words, please provide the greatest strength of the theater set FDC in its present form for carrying out the Combatant Commander's assigned steady state mission sets. | | | | | |
| 6. In one or two words, please provide the greatest weakness of the theater set FDC in its present form for carrying out the Combatant Commander's assigned steady state mission sets. | | | | | |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 7. The FDCs in their present form could be organized to conduct crisis response operations. |
| | | | | | 7a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 8. The FDCs in their present form could be properly trained to conduct crisis response operations. |
| | | | | | 8a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 9. The FDCs in their present form could be equipped to conduct crisis response operations. |
| | | | | | 9a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 10. The FDCs in their present form provide the flexibility to conduct a crisis response operation. |
| | | | | | 10a. Please provide additional clarification of your answer in the amplifying comments, with emphasis on the ability or inability to reorganize the FDCs given to conduct a crisis response operation. |

| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | |
|---|-------------------------------------|---|----------------------------------|----------------------------------|--|
| | | | | | 11. With the FDCs in their present form, USN and USMC forces could be sufficiently integrated to conduct the Combatant Commander's assigned steady state mission sets. |
| | | | | | 11a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 12. With the FDCs in their present form, USN and USMC forces could be sufficiently integrated to conduct crisis response operations. |
| | | | | | 12a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 13. Given the FDCs in their present form, the greatest challenge for the Commander can be found in the employment of the forces. |
| | | | | | 13a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 14. Given the FDCs in their present form, the greatest challenge for the Commander can be found in the implementation of the forces. |
| | | | | | 14a. Please provide additional clarification of your answer in the space provided. |
| -3 Strongly Disagree | -1 Somewhat Disagree | 0 Neither Agree nor Disagree /No opinion | +1 Somewhat Agree | +3 Strongly Agree | 15. Given the FDCs in their present form, the greatest challenge for the Commander can be found in the maintenance of the forces equipment. |
| | | | | | 15a. Please provide additional clarification of your answer in the space provided. |
| 16. Please identify the specific mission in which an FDC is currently engaged you deem to be the most critical. | | | | | |
| 17. Please use the space below to provide any additional comments or feedback regarding the FDCs, suggestions for allocating forces, or issues/changes that you would wish to make the Commander aware of at this point in the game. | | | | | |

Appendix D - Game Schedule

Monday, January 27, 2014

| Time | Event | Location |
|-----------|--|--------------------------------|
| 0800-0815 | Overview and Admin | MLH Auditorium |
| 0815-0830 | Introductory Remarks | MLH Auditorium |
| 0830-0900 | Ellis Group Brief | MLH Auditorium |
| 0900-0930 | Game Design Brief | MLH Auditorium |
| 0930-0945 | Technology Familiarization Brief | MLH Auditorium |
| 0945-1000 | Welcome | MLH Auditorium |
| 1000-1045 | Wargame Group Photo | Spruance |
| 1045-1100 | Break | |
| 1100-1130 | Cell Introductions, Familiarization, and Surveys (Cells) | Room 236/237; 207 (A); 211 (A) |
| 1130-1200 | Refine Alternative FDCs | Room 236/237; 207 (A); 211 (A) |
| 1200-1300 | Lunch | NWC Café |
| 1300-1630 | Refine Alternative FDCs continued | Room 236/237; 207 (A); 211 (A) |
| 1630-1700 | Individual Surveys | Room 236/237; 207 (A); 211 (A) |
| 1800-1900 | No-Host Evening Social (Officers' Club) | |

Tuesday, January 28, 2014

| Time | Event | Location |
|-----------|----------------------------|--------------------|
| 0800-1200 | Force Allocation | Room 205; 207; 211 |
| 1200-1300 | Lunch | NWC Café |
| 1300-1630 | Force Allocation continued | Room 205; 207; 211 |
| 1630-1645 | Individual Surveys | Room 205; 207; 211 |

Wednesday, January 29, 2014

| Time | Event | Location |
|-----------|-------------------------------|--------------------------------|
| 0800-1145 | Crisis Injects | Room 236/237; 207 (A); 211 (A) |
| 1145-1200 | Individual Surveys | Room 236/237; 207 (A); 211 (A) |
| 1200-1300 | Lunch | NWC Café |
| 1300-1645 | Employ, Implement, & Maintain | Room 236/237; 207 (A); 211 (A) |

Thursday, January 30, 2014

| Time | Event | Location |
|-----------|---------------------------|--------------------------------|
| 0800-0945 | Finalize Alternative FDCs | Room 236/237; 207 (A); 211 (A) |
| 0945-1000 | Individual Surveys | Room 236/237; 207 (A); 211 (A) |
| 1000-1200 | Plenary Prep | Room 236/237; 207 (A); 211 (A) |
| 1200-1300 | Lunch | NWC Café |
| 1300-1615 | Plenary Discussion | JCC |
| 1300-1330 | Cell A Outbrief and Q&A | JCC |
| 1330-1400 | Cell B Outbrief and Q&A | JCC |
| 1400-1430 | Cell C Outbrief and Q&A | JCC |
| 1430-1445 | Break | |
| 1445-1615 | Discussion | JCC |
| 1615-1700 | Outbrief Prep | Room 236/237; 207 (A); 211 (A) |

Friday, January 31, 2014

| Time | Event (Location) | Location |
|-----------|--------------------------|--------------------------------|
| 0730-0830 | Outbrief Prep continued | Room 236/237; 207 (A); 211 (A) |
| 0830-0900 | DV pre-brief (Lupo Room) | Lupo Room |
| 0900-0930 | Cell A Outbrief and Q&A | JCC |
| 0930-1000 | Cell B Outbrief and Q&A | JCC |
| 1000-1030 | Cell C Outbrief and Q&A | JCC |
| 1030-1045 | Break | |
| 1045-1200 | Discussion | JCC |
| 1200 | ENDEX | |

Appendix E – Game Participants and Demographics

Participants

The demographic statistics included in this section of the Game Report are based on self-reported responses from the players garnered during the baseline survey administered prior to the start of game play. Thirty members of the U. S. Navy (USN) and U. S. Marine Corps (USMC), representing officer pay grades O-3 through O-6 served as players in the Naval Services Game. All participants had ample knowledge and experience to draw upon when developing potential courses of action and identifying challenges that may limit the U.S. Navy and U.S. Marine Corps' ability to employ, implement, and maintain alternative FDCs. The 30 players averaged more than 20 years of military experience as shown in figure E.2. The players were divided into three cells, providing a mixture of subject matter experts from the U.S. Navy and U. S. Marine Corps in each.

Blue A Player Cell:

| | | |
|----------------------|--------|---|
| Buckley, Michael | LT | Destroyer Squadron TWO |
| Cagle, Kevin | LtCol | MARFORCOM |
| Coffman, Mark | CDR | Navy Warfare Development Command (NWDC) |
| Gilfillan, Thomas | LCDR | Amphibious Squadron 8 |
| Lasater, Shelby | Gunner | Training & Education Command, The Basic School, Infantry Officer Course |
| Muriano, Dean | CDR | NECC |
| Murphy, Mark | Maj | HQMC, Aviation |
| Niewenhous, Siebrand | LtCol | HQMC, Plans, Policies, and Operations. POE-40-Expeditionary Policies, MPF (MPSRONs) |
| Ortiz, Juan | LtCol | HQMC, Installations and Logistics, Logistics Plans and Operations |
| Regnier, Eric | LT | Navy Warfare Development Command (NWDC) |

Blue B Player Cell:

| | | |
|---------------------|-------|---|
| Arantz, Christopher | Col | HQMC, Installations and Logistics, Logistics Plans |
| Grogan, David | LCDR | USS Hartford |
| Harrington, Edward | CAPT | COMEXSTRIKGRU THREE (San Diego) |
| Howard, Wesley | LT | Navy Expeditionary Combat Command Pacific (NECCPAC) |
| Jackson, Robert | Col | MCCDC, Futures Directorate, Ellis Group |
| Lucas, James | LCDR | VFA-41 |
| Pitchford, Richard | LCol | 26 th MEU |
| Schreiner, David | Maj | HQMC, DC Aviation |
| Ware, Steven | LtCol | MARFORCOM |
| Wood, John (Ian) | CDR | Afloat Training Group Pacific Northwest |

Blue C Player Cell:

| | | |
|--------------------|-------|--|
| Adamiec, David | LtCol | 3D MEB |
| Bote, Mark | LT | Navy Warfare Development Command (NWDC) |
| Croushore, Derek | Maj | HQMC, Plans Policies and Operations Expeditionary Policies Branch |
| Dickey, Stuart | Col | MARFORCOM |
| Eriksen, David | CDR | Navy Warfare Development Command (NWDC) |
| Hardegen, Robert | CAPT | AIRLANT |
| McDuffie, David | CAPT | Navy Warfare Development Command (NWDC) |
| Miagany, Ricardo | LtCol | HQMC, Programs & Resources (P&R), Programs Analysis & Evaluation (PA&E) |
| Murchison, Michael | LtCol | HQMC, Installations and Logistics (I&L), Logistics Policy & Capabilities (LPC) |
| Sukols, Nathan | CDR | COMSUBPAC |

In addition to the BLUE Cell participants, a final session including RADM Sinclair Harris (USN), RADM Ted Carter (USN), BGen Kevin Killea (USMC), and RDML Rich Snyder (USN) was also conducted, during which the perspectives and insights of these senior naval services leaders was captured for inclusion in post-game analysis.

With respect to warfare specialties, 33 percent of participants served in the surface/subsurface warfare community, 24 percent were USN and USMC aviators, 20 percent were USMC ground combat experts, 17 percent belonged to the USMC logistics specialty and 6 percent served in the NECC. Within the surface warfare realm, amphibious and CSG subject matter experts were represented.

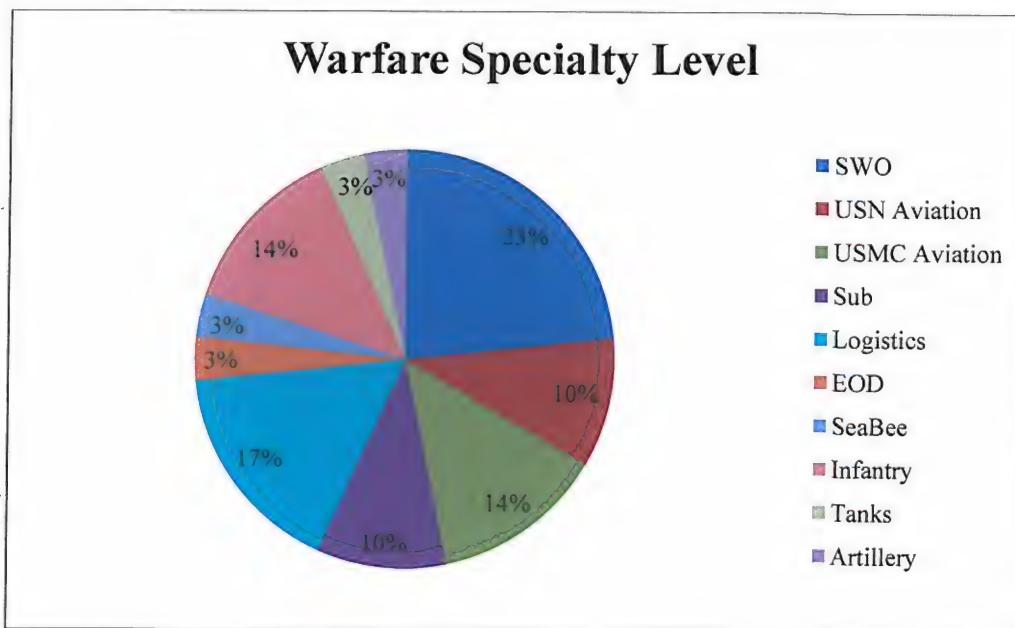


Figure E.1- Warfare Specialty

Overall, players in the game reported to have had a moderate level of warfare specialty experience during their military careers.

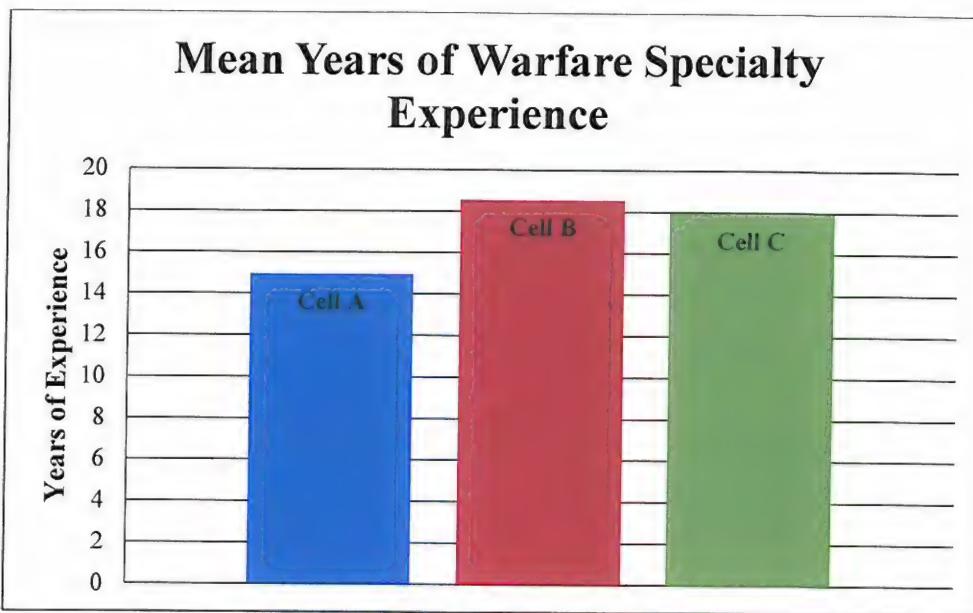


Figure E.2- Comparison of Warfare Specialty Experience between the Cells.

The NSG 13 participants were highly educated, with 57 percent of the players holding a master's degree. The educational level of participants is displayed in figure E.3.

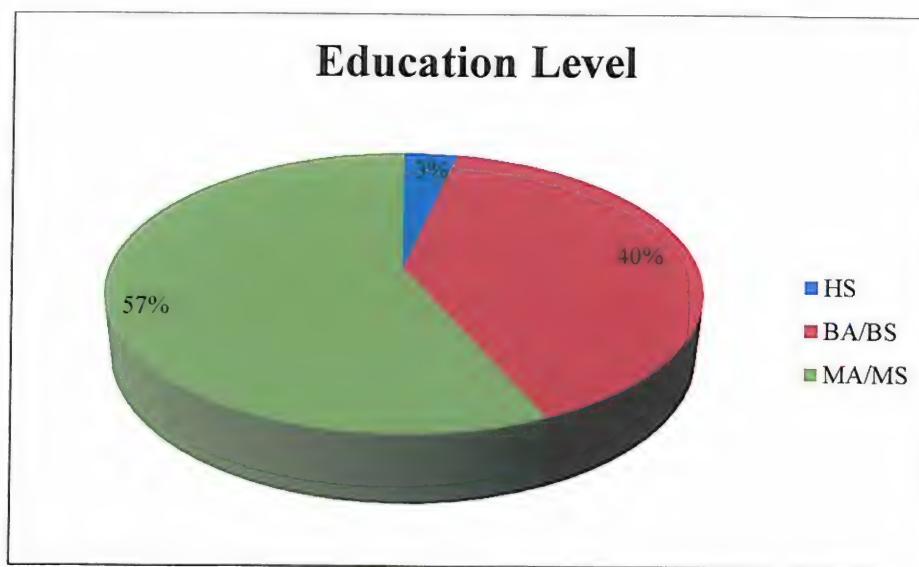


Figure E.3- Summary of Game Participants' Education from Baseline Survey

Appendix F - Analytical Data

A. Overarching Methodology and Analytic Framing

This section discusses the overarching analytical techniques used in NSG 13. Given NSG 13's focus on generating new knowledge to develop a better understanding of alternative force constructs, the overarching methodology for this game was an inductive process. Specifically, the Data Collection and Analysis Team (DCAT) sought to identify terms, phrases, themes, and concepts germane to the game's five research questions. The preponderance of datasets encountered in the NSG 13 was qualitative, because they focused on the players' opinions, beliefs, and values. Quantitative data were also included in this project, especially demographic data pertaining to players' ages, years of experience, and level of educational attainment (see figures 2.3 and 2.4).

The collection of seemingly disparate datasets (i.e., both qualitative and quantitative information) suggested that a triangulative approach to analysis was warranted. This process allowed the DCAT to derive the same or very similar conclusions using different datasets or methods.

Triangulation has incredible power as an analytic technique, because it allows the researcher to distinguish between exceptions and commonalities in data. Moreover, the use of triangulation approach allowed the DCAT to evaluate data with the appropriate methodology, rather than the methodology driving the evaluation. A brief description of each analytic of the three analytic practices (content analysis, grounded theory, and ethnography) used to generate triangulative knowledge are described in the ensuing section of the report.

Content Analysis: A method in which a researcher seeks objectively to describe the content of communication messages that people have previously produced, content analysis involves identifying coherent and important examples and patterns in the data and subdividing data into coherent categories, patterns, and themes.

Grounded Theory: A more rigorous approach to analysis than content analysis, grounded theory employs systematic, hierarchical procedures to develop inductively derived theory grounded in data. Grounded theory directs researchers to look for patterns in data so that they can make general statements about the phenomena they examined. Selective, in-vivo, and serendipitous coding were conducted on these data using the ATLAS.ti software application. The use of ATLAS.ti is especially cogent for qualitative analysis, because the co-occurrence function within this software function allowed the DCAT to determine the level of correlation between terms from little or no correlation ($r=0$) to moderately correlated ($r=.50$) to strongly correlated ($r=1.00$).

Although the co-occurrence function appears similar to Pearson Product Moment Correlation in quantitative statistics (i.e., the r -value corresponds to absolute value 1.00, in which the stronger or more highly correlated the relationship between the two terms) the correlational data themselves are qualitative. Lastly, direction of relationship cannot be computed in ATLAS.ti due to the qualitative relationship of the data, although r -squared analysis was subsequently

performed in an effort to determine the percentage of shared relationship between each pair of coded terms.

Ethnography: Originally found in the field of Anthropology, ethnography occurs with a natural setting and seeks to understand the social interactions and rationale of players' of decisions during the course of game play. Ethnographers assigned to all BLUE Cells were trained in this process prior to game execution. They subsequently captured robust, qualitative, descriptive data throughout the facilitated discussions, plenary sessions, and final outbrief sessions.

B. Collection Approach

In order to answer the five research questions considered in the 2013 Naval Services Game, eight primary datasets were collected. These eight datasets, their inherent value to this project as data streams, and the approach used to analyze them are included in appendix F.

Formatting and standardization: Excel spreadsheets and PowerPoint slides of Google Earth screen capture FDC map templates submitted to the White cell were required to adhere to the structure provided by the control team. Any issues with the player cell inputs were identified during the game and brought to the DCAT who immediately reported their concerns to the Control cell for corrective action. It was the responsibility of the technographers in each cell to ensure that templates were properly populated and saved in the appropriate location on the gaming network (GAMENET).

Internal validity: Collection instruments were designed to ensure that accurate conclusions could be drawn from the data. To ensure their proper use during game play, specific internal validity issues with these instruments and the information they were designed to collect were identified during the Alpha and Beta tests, and were corrected prior to the start of game play.

External validity: External validity applies predominately to the open-ended survey questions that were asked in the individual cell player surveys that were captured via a web-based tool on the Secret GAMENET. In order to provide quality controls on data collection, these questions were evaluated by an internal focus group as part of the Alpha and Beta testing process, prior to being deployed in the game.

C. Data Collection & Analysis Team Roles and Responsibilities

The five functional elements of the Data Collection and Analysis Team (i.e., game/report leads, data collection lead, facilitators, technographers, and ethnographers) are described in the following section of this game report.

DCAT Game/Report Co-Leads: Responsible for collection strategies, information technology challenges, concerns with methodologies and analytic procedures, and tasked other members of the team with preparation of report sections and ensured compliance with requisite deadlines. The NWC DCAT co-leads for NSG 13 were Dr. Hank Brightman and LCDR Stacey Auger

(USN). MCWL DCAT members who supported post-game analysis and report-writing included Mr. Joseph Linehan and Ms. Janelle Lor.

Data Collection Lead: Accountable for data management during the game as well as post-execution organization of files. The Data Collection Lead answered all questions regarding file structure, data import/export, and information. The Collection Lead for this project was CDR Chris Baker (USN).

Facilitators: Charged with management of the three player cells (BLUE Cells A, B and C) to ensure that player deliverables (e.g., FDC templates, individual participant surveys, threaded discussions, and cell outbriefs) were completed on schedule. Fostered the environment for robust and candid player discussion, and coordinated participant inputs to ensure that conversation was germane to the game's objectives and research questions. The facilitators for the NSG 13 were Prof. Terry Mahoney, Col John Caldwell (USMC-Ret.) and Mr. Pete Pellegrino.

Technographers: Supported player development of the FDC templates, by assisting cell participants with creating their final outbriefs, displaying generated outputs in order to support facilitated discussion in the plenary sessions, and ensuring that data were properly saved in the appropriate formats and locations on the Secret GAMENET for subsequent analysis. The technographers for this project were CDR Brandon McCauley (USN), CDR Mitchel Wilson (USN), CDR Jeffrey Uhde (USN), LCDR David Nava (USN), LCDR Fisher Reynolds (USNR), and Mr. Al McCoy.

Ethnographers: Employed a variety of data capture techniques to record player comments and perspectives during game play and plenary sessions. The ethnographers recorded observations in Microsoft Word for use in post-game analysis. The ethnographers in the Naval Services Game were CDR David Welch (USNR), LT Elisabeth Erickson (USNR), LT Elizabeth Corwin (USNR), LT Rob Herrick (USNR), LT Mark Regis (USNR), Ms. Janelle Lor, Mr. Joseph Linehan, and Mr. Wesley Williams.

D. Identification of Independent, Dependent, and Moderator Variables

In order to objectively conduct research into alternative force deployment constructs, the Data Collection and Analysis Team (DCAT) identified both the independent variables (i.e., those items that can be manipulated by the researchers for the purpose of conducting the study) and dependent variables (resultants). Moreover, the relationship of these two variables to a third variable, referred to in social sciences research as a moderator variable, was also included.

Identifying the independent and dependent variables was important, because it established the parameters that would be studied in the 2013 Naval Services Game. By bounding game design around the independent variable (force deployment construct) as it pertains to the dependent variables (steady state, crisis response, force re-aggregation, interoperability, and mission accomplishment), analysts were able to focus their research efforts on the objective promulgated

by the Naval Board. Moreover, the inclusion of moderator variables allowed data to be collected along specific lines of inquiry, thus affording the cell facilitators the opportunity to keep cell discussions concretely focused during game play. Based on the five research questions posed in this project, the independent, dependent and moderator variables were identified as follows:

Research Question #1

- Force Deployment Construct (FDC) (Independent)
- Principles (Moderator)
- Force Design Criteria (FDCr) (Moderator)
- Accomplish mission in steady state (Dependent)
- Accomplish mission in crisis response (Dependent)

Research Question #2

- FDC (Independent)
- Issues/challenges influencing interoperability (Dependent)

Research Question #3

- FDC (Independent)
- Naval force integration (Independent)
- Capabilities (Moderator)
- Accomplish mission in steady state (Dependent)
- Accomplish mission in crisis response (Dependent)

Research Question #4

- Naval force integration (Independent)
- Challenges of force re-aggregation (Dependent)
- Overcoming challenges of force re-aggregation (Dependent)

Research Question #5

- FDC (Independent)
- Naval services (Independent)
- Efficiently implement (Moderator)
- Efficiently employ (Moderator)
- Efficiently maintain (Moderator)
- Mission accomplishment (Dependent)

NSG 13 sought to answer these questions through direct observation of participants (i.e., ethnographic data capture), individual player surveys, facilitator-guided sessions within each of the player cells, and via a final, all-inclusive plenary session. Data garnered for post-game analysis were qualitative, and represented the ideas, opinions, beliefs, and values of the players are synthesized through the shared experience of the war game. Although some quantitative analytical processes were employed in the post-game analysis, the data themselves remain qualitative and should not be used for predictive purposes.

E. Analytical Datasets

| Dataset Name | Inherent Value of Data | Primary Analytical Technique & Tool(s) |
|--|--|--|
| Dataset #1: Web-based Force Allocation Spreadsheet | Collective Insights/Macro-level Themes | Descriptive Quantitative Statistics using Microsoft Excel, Grounded Theory using selective coding with ATLAS.ti, and Data Visualization using Analyst's Notebook |
| Dataset #2: Microsoft PowerPoint of Google Earth screen capture of FDC Map | Collective Insights/Macro-level Themes | Data Visualization using Analyst's Notebook |
| Dataset #3: Participant Demographic Survey | Participant Background | Descriptive Quantitative Statistics, Likert-scale questions analyzed using Microsoft Excel |
| Dataset #4: Player Survey (Likert & Open Ended Questions) | Individual Insights | Descriptive Quantitative Statistics, Likert-scale questions analyzed using Microsoft Excel, Grounded Theory using selective and in-vivo coding using ATLAS.ti |
| Dataset #5: Ethnographic Notes from Cell-Based Facilitated Discussion Session (Plenary) | Macro-Level Insights | Content Analysis and Grounded Theory using selective coding, in-vivo and serendipitous coding with ATLAS.ti |
| Dataset #6: Threaded Discussion from Cell-Based Facilitated Discussion Session (Plenary) | Macro-Level Insights | Content Analysis and Grounded Theory using selective coding, in-vivo and serendipitous coding with ATLAS.ti |
| Dataset #7: Microsoft PowerPoint Final Outbrief Slides | Macro-Level insights | Content Analysis and Grounded Theory using selective coding, in-vivo and serendipitous coding with ATLAS.ti |
| Dataset #8: Ethnographic Notes from Group Plenary Session and Final Outbrief | Macro-Level Insights | Content Analysis and Grounded Theory using selective coding, in-vivo and serendipitous coding with ATLAS.ti |

Table F.1 –Datasets Collected, Inherent Value of Data, and Analytic Techniques

Each of the eight datasets analyzed in this game are considered descriptive, because they emphasize the nature of certain situations, settings, processes, relationships and systems. These descriptive datasets were also aggregated to clarify the information that was gathered.

Before, during, and after the game, members of the DCAT ensured the following parameters for these data streams strictly adhered to quality assurance/quality control requirements.

F. Analytic Review of Player-Identified Data

As a result of a comprehensive literature review prior to game development, specific terms and phrases were identified that are germane to the sponsor's objectives, and were deemed relevant to applying naval force design criteria and force design constructs to response operations.

This appendix provided the terms and phrases from the literature that were identified as the independent and dependent variables for NSG 13. These variables also formed the nucleus of the selective codes that were used to discern co-occurrence using the grounded theory approach to qualitative analysis. The DCAT identified five research questions. Responses to each of the five research questions are provided in section IV(E) of this report.

After the game concluded, the DCAT performed structured analysis on the NSG 13's eight data streams discussed above (refer to table F.1). Using grounded theory, and the attendant co-occurrence function within ATLAS.ti, pairs of terms scoring the highest overall correlation values were included in this analysis; r-squared analysis was also performed on each of the term pairs coded from the eight data streams discussed this appendix.

A summary of the analytic findings using the grounded theory process and the ATLAS.ti software application is provided in Table 4.1. Although qualitative in nature, borrowing process from quantitative analysis, the closer the co-occurrence, or "r value" is to 1.00, the stronger, or more highly correlated the relationship. In addition, the r-squared value ("RSQ") provides the percentage of shared change between the two variables (i.e., what percentage of change is explained by these two variables in relationship to each other).

The co-occurring values described in Table F.2 illustrate some of the relationships that were highlighted during discussions and production of cell deliverables. These adjectives coupled with the alternative FDCs, provide thoughts on how cells built and employed the FDCs to address steady state and crisis response missions.

| Term 1 | Term 2 | Correlation Value | # Occurrences | RSQ |
|------------------------|-----------------------|-------------------|---------------|---------------|
| Doctrine | Change | 0.16 | 32 | 0.0256 |
| Sustainable | Equip | 0.16 | 32 | 0.0256 |
| Strength | Steady State | 0.14 | 50 | 0.0196 |
| Weakness | Steady State | 0.14 | 58 | 0.0196 |
| Training | Aggregation | 0.14 | 71 | 0.0196 |
| Crisis Response | Aggregation | 0.13 | 68 | 0.0169 |
| Scalable | Adaptable | 0.13 | 18 | 0.0169 |
| Flexibility | Capabilities | 0.13 | 85 | 0.0169 |
| Training | Integration | 0.13 | 71 | 0.0169 |
| Speed of Response | Crisis Response | 0.13 | 50 | 0.0169 |
| Scalable | Adaptable | 0.13 | 18 | 0.0169 |
| C2 | Aggregation | 0.12 | 51 | 0.0144 |
| Flexibility | Adaptable | 0.12 | 37 | 0.0144 |
| C2 | Command Relationships | 0.11 | 22 | 0.0121 |
| Culture | Change | 0.11 | 20 | 0.0121 |
| Weakness | Sustainable | 0.11 | 33 | 0.0121 |
| Specialization | Gap | 0.11 | 25 | 0.0121 |
| Steady State | Flexibility | 0.11 | 54 | 0.0121 |
| Crisis Response | Capabilities | 0.10 | 64 | 0.01 |
| Integration | C2 | 0.10 | 46 | 0.01 |
| Integration | Capabilities | 0.10 | 68 | 0.01 |
| Presence | Deterrence | 0.10 | 12 | 0.01 |
| Speed of Response | Presence | 0.10 | 26 | 0.01 |
| Strength | Flexibility | 0.10 | 37 | 0.01 |
| Speed of Response | Capabilities | 0.10 | 55 | 0.01 |
| Weakness | Aggregation | 0.10 | 47 | 0.01 |
| Steady State | Capabilities | 0.10 | 65 | 0.01 |

Table F.2 – Correlational analysis of terms identified using ATLAS.ti